

January 1999 – January 2004

- Abuladze, M.K., Asatiani, N.V., Bakradze, N.G., Kartvelishvili, T.M., Holman, H.-Y.N., Kalabegishvili, T.L., Mosulishvili, L.M., Rcheulishvili, A.N., Sapojnikova, N.A. and Tsibakhashvili, N.Y. 2002. Effect of chromium action on the protein composition of A. oxydans. *Fresenius Environmental Bulletin*, **11**(9A), pp. 562-567, LBNL-50929.
- Aciego, Sarah, Kennedy, B. M., DePaolo, Donald J., Christensen, John N. and Hutcheon, Ian. 2003. U-Th/He age of phenocrystic garnet from the 79AD eruption of Mt. Vesuvius. *Earth and Planetary Science Letters*, **216**(1-2), pp. 209-219, LBNL-53622.
- Ádámkóvics, Máté and Boering, Kristie A. 2002. Photochemical formation rates of organic aerosols through time-resolved *in situ* laboratory measurements. *Journal of Geophysical Research - Planets*, LBNL-51908.
- Aggarwal, M.M., Agnihotri, A., Ahammed, Z., Angelis, A.L.S., Antonenko, V., Arefiev, V., Astakhov, V., Avdeitchikov, V., Awes, T.C., Baba, P.V.K.S., Badyal, S.K., Barlag, C., Bathe, S., Batiounia, B., Bernier, T., Bhalla, K.B., Bhatia, V.S., Blume, C., Bock, R., Bohne, E.-M., Borocz, Z., Bucher, D., Buijs, A., Busching, H., Carlen, L., Chalyshev, V., Chattopadhyay, S., Cherbatchev, R., Chujo, T., Claussen, A., Das, A.C., Decowski, M.P., Delagrangé, H., Djordjadze, V., Donni, P., Doubovik, I., Dubey, A.K., Dutt, S., Dutta Majumdar, M.R., El Chenawi, K., Eliseev, S., Enosawa, K., Foka, P., Fokin, S., Ganti, M.S., Garpman, S., Gavrishchuk, O., Geurts, F.J.M., Ghosh, T.K., Glasow, R., Gupta, S.K., Guskov, B., Gustafsson, H.A., Gutbrod, H.H., Higuchi, R., Hrivnacova, I., Ippolitov, M., Kalechofsky, H., Kamermans, R., Kampert, K.-H., Karadjev, K., Karpio, K., Kato, S., Kees, S., Klein-Bosing, C., Knoche, S., Kolb, B.W., Kosarev, I., Koutcheryaev, I., Krumpel, T., Kugler, A., Kulinich, P., Kurata, M., Kurita, K., Kuzmin, N., Langbein, I., Lebedev, A., Lee, Y.Y., Lohner, H., Luquin, L., Mahapatra, D.P., Manko, V., Martin, M., Martinez, G., Maximov, A., Mgebrichvili, G., Miake, Y., Mishra, G.C., Miyamoto, Y., Mohanty, B., Mora, M.-J., Morrison, D., Mukhopadhyay, D.S., Naef, H., Nandi, B.K., Nayak, S.K., Nayak, T.K., Neumaier, S., Nianine, A., Nikitine, V., Nikolaev, S., Nilsson, P., Nishimura, S., Nomokonov, P., Nystrand, J., Obenshain, F.E., Oskarsson, A., Otterlund, I., Pacher, M., Pavliouk, S., Peitzmann, T., Petracek, V., Pinguand, W., Plasil, F., Poblitzki, U.V., Purschke, M.L., Rak, J., Raniwala, R., Raniwala, S., Ramamurthy, V., Rao, N.K., Retiere, F., Reygers, K., Roland, G., Rosselet, L., Roufanov, I., Roy, C., Rubio, J.M., Sako, H., Sambyal, S.S., Santo, R., Sato, S., Schlagheck, H., Schmidt, H.-R., Schutz, Y., Shabratova, R., Shah, T.H., Sibiriak, I., Siemiarczuk, T., Silvermyr, D., Sinha, B.C., Slavine, N., Soderstrom, K., Solomey, N., Sood, G., Sorensen, S.P., Stankus, P., Stefanek, G., Steinberg, P., Stenlund, E., Stuken, D., Sumbera, M., Svensson, T., Trivedi, M.D., Tsvetkov, A., Tykarski, L., Urbahn, J., v.d. Pijll, E.C., v. Eijndhoven, N., v. Nieuwenhuizen, J., Viyogi, Y.P., Vodopianov, A., Voros, S., Wysouch, B., Yagi, K., Yokota, Y. and Young, G.R. 2000. Scaling of particle and transverse energy production in $^{208}\text{Pb} + ^{208}\text{Pb}$ collisions at 158 (center dot)A GeV. *The European Physical Journal C*, **18**(4), LBNL-50777.

Aggarwal, M.M., Agnihotri, A., Ahammed, Z., Angelis, A.L.S., Antonenko, V., Arefiev, V., Astakhov, V., Avdeitchikov, V., Aves, T.C., Baba, P.V.K.S., Badyal, S.K., Barlag, C., Bathe, S., Batiounia, B., Bernier, T., Bhalla, K.B., Bhatia, V.S., Blume, C., Bock, R., Bohne, E.-M., Borocz, Z., Bucher, D., Buijs, A., Busching, H., Carlen, L., Chalyshev, V., Chattopadhyay, S., Cherbatchev, R., Chujo, T., Claussen, A., Das, A.C., Decowski, M.P., Delagrangé, H., Djordjadze, V., Donni, P., Doubovik, I., Dubey, A.K., Dutt, S., Dutta Majumdar, M.R., El Chenawi, K., Eliseev, S., Enosawa, K., Foka, P., Fokin, S., Ganti, M.S., Garpman, S., Gavrishchuk, O., Geurts, F.J.M., Ghosh, T.K., Glasow, R., Gupta, S.K., Guskov, B., Gustafsson, H.A., Gutbrod, H.H., Higuchi, R., Hrivnacova, I., Ippolitov, M., Kalechofsky, H., Kamermans, R., Kampert, K.-H., Karadjev, K., Karpio, K., Kato, S., Kees, S., Klein-Bsing, C., Knoche, S., Kolb, B.W., Kosarev, I., Koutcheryaev, I., Krmpel, T., Kugler, A., Kulinich, P., Kurata, M., Kurita, K., Kuzmin, N., Langbein, I., Lebedev, A., Lee, Y.Y., Lohner, H., Luquin, L., Mahapatra, D.P., Manko, V., Martin, M., Martinez, G., Maximov, A., Mgebrichvili, G., Miake, Y., Mishra, G.C., Miyamoto, Y., Mohanty, B., Mora, M.-J., Morrison, D., Mukhopadhyay, D.S., Naef, H., Nandi, B.K., Nayak, S.K., Nayak, T.K., Neumaier, S., Nianine, A., Nikitine, V., Nikolaev, S., Nilsson, P., Nishimura, S., Nomokonov, P., Nystrand, J., Obenshain, F.E., Oskarsson, A., Otterlund, I., Pachr, M., Pavliouk, S., Peitzmann, T., Petracek, V., Pinganaud, W., Plasil, F., Poblitzki, U.V., Purschke, M.L., Rak, J., Raniwala, R., Raniwala, S., Ramamurthy, V., Rao, N.K., Retiere, F., Reygers, K., Roland, G., Rosselet, L., Roufanov, I., Roy, C., Rubio, J.M., Sako, H., Sambyal, S.S., Santo, R., Sato, S., Schlagheck, H., Schmidt, H.-R., Schutz, Y., Shabratova, G., Shah, T.H., Sibiraki, I., Siemiarczuk, T., Silvermyr, D., Sinha, B.C., Slavine, N., Soderstrom, K., Solomey, N., Sood, G., Sorensen, S.P., Stankus, P., Stefanek, G., Steinberg, P., Stenlund, E., Stuken, D., Sumbera, M., Svensson, T., Trivedi, M.D., Tsvetkov, A., Tykarski, L., Urbahn, J., v.d. Pijll, E.C., v. Eijndhoven, N., v. Nieuwenhuizen, J., Viyogi, Y.P., Vodopianov, A., Voros, S., Wysouch, B., Yagi, K., Yokota, Y., Young, G.R. and Collaboration, WA98. 2000. Localized charged-neutral fluctuations in 158A GeV Pb + Pb collisions. *Physical Review C*, **64**(01), LBNL-50757.

Aggarwal, M.M., Agnihotri, A., Ahammed, Z., Angelis, A.L.S., Antonenko, V., Arefiev, V., Astakhov, V., Avdeitchikov, V., Aves, T.C., Baba, P.V.K.S., Badyal, S.K., Barlag, C., Bathe, S., Batiounia, B., Bernier, T., Bhalla, K.B., Bhatia, V.S., Blume, C., Bock, R., Bohne, E.-M., Borocz, Z., Bucher, D., Buijs, A., Busching, H., Carlen, L., Chalyshev, V., Chattopadhyay, S., Cherbatchev, R., Chujo, T., Claussen, A., Das, A.C., Decowski, M.P., Delagrangé, H., Djordjadze, V., Donni, P., Doubovik, I., Dutt, S., Dutta Majumdar, M.R., El Chenawi, K., Eliseev, S., Enosawa, K., Foka, P., Fokin, S., Ganti, M.S., Garpman, S., Gavrishchuk, O., Geurts, F.J.M., Ghosh, T.K., Glasow, R., Gupta, S.K., Guskov, B., Gustafsson, H.A., Gutbrod, H.H., Higuchi, R., Hrivnacova, I., Ippolitov, M., Kalechofsky, H., Kamermans, R., Kampert, K.-H., Karadjev, K., Karpio, K., Kato, S., Kees, S., Klein-Bosing, C., Knoche, S., Kolb, B.W., Kosarev, I., Koutcheryaev, I., Krumpel, T., Kugler, A., Kulinich, P., Kurata, M., Kurita, K., Kuzmin, N., Langbein, I., Lebedev, A., Lee, Y.Y., Lohner, H., Luquin, L., Mahapatra, D.P., Manko, V., Martin, M., Martinez, G., Maximov, A., Mgebrichvili, G., Miake, Y., Mir, Md.F., Mishra, G.C., Miyamoto, Y., Mohanty, B., Mora, M.-J., Morrison, D., Mukhopadhyay, D.S., Naef, H., Nandi, B.K., Nayak, S.K., Naya, T.K., Neumaier, S., Nianine, A., Nikitine, V., Nikolaev,

- S., Nilsson, P., Nishimura, S., Nomokonov, P., Nystrand, J., Obenshain, F.E., Oskarsson, A., Otterlund, I., Pachr, M., Pavliouk, S., Peitzmann, T., Petracek, V., Pinganaud, W., Plasil, F., von Poblitzki, U., Purschke, M.L., Rak, J., Raniwala, R., Raniwala, S., Ramamurthy, V.S., Rao, N.K., Retiere, F., Reygers, K., Roland, G., Rosselet, L., Roufanov, I., Roy, C., Rubio, J.M., Sako, H., Sambyal, S.S., Santo, R., Sato, S., Schlagheck, H., Schmidt, H.-R., Schutz, Y., Shabratova, G., Shah, T.H., Sibiriak, I., Siemiarz, T., Silvermyr, D., Sinha, B.C., Slavine, N., Soderstrom, K., Solomey, N., Sorensen, S.P., Stankus, P., Stefanek, G., Steinberg, P., Stenlund, E., Stuken, D., Sumbera, M., Svensson, T., Trivedi, M.D., Tsvetkov, A., Tykarski, L., Urbahn, J., Pijll, E.C.v.d., Eijndhoven, N.v., Nieuwenhuizen, G.J.v., Vinogradov, A., Viyogi, Y.P., Vodopianov, A., Voros, S., Wyslouch, B., Yagi, K., Yokota, Y. and Young, G.R. 2000. Three-pion interferometry results from central Pb + Pb collisions at 158 A GeV/c. *Physical Review Letters*, **85**(14), LBNL-49787.
- Ahlers, C.Fredrik, Ghezzehei, Teamrat and Finsterle, Stefan. 2003. Development and testing of a method for efficient simulation of evaporation from a seepage face. *TOUGH Symposium 2003*. Lawrence Berkeley National Laboratory. May 12-14, 2003. LBNL-52502.
- Ahlers, C.F. and Liu, H.H. 2000. Calibrated properties model AMR U0035, LBID-2325.
- Ahlers, Rick, Trautz, Rob, Cook, Paul and Finsterle, Stefan. 2001. Testing and modeling of seepage into underground openings in a heterogeneous fracture system at Yucca Mountain, Nevada. *International Groundwater Symposium IAHR, IAHS, AGU, ASCE/EWRI*, LBNL-48911.
- Ahrens, J., Andres, E., Bai, X., Barouch, G., Barwick, S.W., Bay, R.C., Becka, T., Becker, K.-H., Bertrand, D., Binon, F., Biron, A., Booth, J., Botner, O., Bouchta, A., Bouhali, O., Boyce, M.M., Carius, S., Chen, A., Chirkin, D., Conrad, J., Cooley, J., Costa, C.G.S., Cowen, D.F., Dalberg, E., De Clercq, C., DeYoung, T., Desiati, P., Dewulf, J.-P., Dokus, P., Edsjo, J., Ekstrom, P., Feser, T., Frere, J.-M., Gaisser, T.K., Gaug, M., Goldschmidt, A., Hallgren, A., Halzen, F., Hanson, K., Hardtke, R., Hauschildt, T., Hellwig, M., Heukenkamp, H., Hill, G.C., Hulth, P.O., Hundertmark, S., Jacobsen, J., Karle, A., Kim, J., Koci, B., Kopke, L., Kowalski, M., Lamoureux, J.I., Leich, H., Leuthold, M., Lindahl, P., Liubarsky, I., Loaiza, P., Lowder, D.M., Madsen, J., Marciniowski, P., Matis, H.S., McParland, C.P., Miller, T.C., Minaeva, Y., Miocinovic, P., Mock, P.C., Morse, R., Neunhoffer, T., Niessen, P., Nygren, D.R., Ogelman, H., Olbrechts, Ph., Perez de los Heros, C., Pohl, A.C., Porrata, R., Price, P.B., Przybylski, G.T., Rawlins, K., Reed, C., Rhode, W., Ribordy, M., Richter, S., Rodriguez Martino, J., Romenesko, P., Ross, D., Sander, H.-G., Schmidt, T., Schneider, D., Schwarz, R., Silvestri, A., Solarz, M., Spiczak, G.M., Spiering, C., Starinsky, N., Steele, D., Steffen, P., Stokstad, R.G., Streicher, O., Sudhoff, P., Sulanke, K.-H., Taboada, I., Thollander, L., Thon, T., Tilav, S., Vander Donckt, M., Walck, C., Weinheimer, C., Wiebusch, C.H., Wiedeman, C., Wischniewski, R., Wissing, H., Woschnagg, K., Wu, W., Yodh, G. and Young, S. 2002. Observation of high energy atmospheric neutrinos with antarctic muon and neutrino detector array. *Physical Review D*, **D66**, LBNL-53534.

Ahrens, J., Bai, X., Barwick, S.W., Bay, R.C., Becka, T., Becker, K.-H., Bernardini, E., Bertrand, D., Binon, F., Boeser, S., Botner, O., Bouchta, A., Bouhali, O., Burgess, T., Carius, S., Castermans, T., Chirkin, D., Conrad, J., Cooley, J., Cowen, D.F., Davour, A., De Clercq, C., DeYoung, T., Desiati, P., Doksus, P., Ekstrom, P., Feser, T., Gaisser, T.K., Ganugapati, R., Gaug, M., Geenen, H., Gerhardt, L., Goldschmidt, A., Hallgren, A., Halzen, F., Hanson, K., Hardtke, R., Hauschildt, T., Hellwig, M., Herquet, P., Hill, G.C., Hulth, P.O., Hughey, B., Hultqvist, K., Hundertmark, S., Jacobsen, J., Karle, A., Kuehn, K., Kim, J., Kopke, L., Kowalski, M., Lamoureux, J.I., Leich, H., Leuthold, M., Lindahl, P., Liubarsky, I., Madsen, J., Mandli, K., Marciniowski, P., Matis, H.S., McParland, C.P., Messarius, T., Miller, T.C., Minaeva, Y., Miocinovic, P., Mock, P.C., Morse, R., Neunhoffer, T., Niessen, P., Nygren, D.R., Ogelman, H., Olbrechts, P., Perez de los Heros, C., Pohl, A.C., Porrata, R., Price, P.B., Przybylski, G.T., Rawlins, K., Resconi, E., Rhode, W., Ribordy, M., Richter, S., Rodriguez Martino, J., Romenesko, P., Ross, D., Sander, H.-G., Schlenstedt, S., Schinarakis, K., Schmidt, T., Schneider, D., Schwarz, R., Silvestri, A., Solarz, M., Stamatikos, M., Spiczak, G.M., Spiering, C., Steele, D., Steffen, P., Stokstad, R.G., Sulanke, K.-H., Taboada, I., Tilav, S., Wagner, W., Walck, C., Wang, Y.-R., Wiebusch, C.H., Wiedemann, C., Wischnewski, R., Wissing, H., Woschnagg, K., Wu, W., Yodh, G. and Young, S. 2003. Limits on diffuse fluxes of high energy extraterrestrial neutrinos with the AMANDA-B10 detector. *Physical Review Letters*, **90**, LBNL-53535.

Andersen, G. L., Radnedge, L., Kiem, P., Wagner, D., Chu, M. C., and Worsham, P. L. 2003. Genetic Relatedness among Isolates of *Yersinia pestis* using Single Nucleotide Polymorphism Analysis. *American Society for Microbiology 104th Meeting*. New Orleans, LA. May 19-23, 2004. LBNL-54156 Abs.

Andres, E., Askebjør, P., Bai, X., Barouch, G., Barwick, S.W., Bay, R.C., Becker, K.-H., Bergstrom, L., Bertrand, D., Bierenbaum, D., Biron, A., Booth, J., Botner, O., Bouchta, A., Boyce, M.M., Carius, S., Chen, A., Chirkin, D., Conrad, J., Cooley, J., Costa, C.G.S., Cowen, D.F., Dalling, J., Dalberg, E., DeYoung, T., Deslati, P., Dewulf, J.-P., Doksus, P., Edsjo, J., Ekstrom, P., Erlandsson, B., Feser, T., Gaug, M., Goldschmidt, A., Goobar, A., Gray, L., Haase, H., Hallgren, A., Halzen, F., Hanson, K., Hardtke, R., He, Y.D., Hellwig, M., Heukenkamp, H., Hill, G.C., Hulth, P.O., Hundertmark, S., Jacobsen, J., Kandhadal, V., Karle, A., Kim, J., Koci, B., Lopke, L., Kowalski, M., Leich, H., Leuthold, M., Lindahl, P., Llubarsky, I., Loaiza, P., Lowder, D.M., Ludvig, J., Madsen, J., Marciniowski, P., Matis, H.S., Mihalyi, A., Mikolajski, T., Miller, T.C., Minaeva, Y., Miocinovic, P., Mock, P.C., Morse, R., Neunhoffer, T., Newcomer, F.M., Niessen, P., Nygren, D.R., Ogelman, H., Perez de los Heros, C., Porrata, R., Price, P.B., Rawlins, K., Reed, C., Rhode, W., Richards, A., Richter, S., Rodriguez Martino, J., Romenesko, P., Ross, D., Rubinstein, H., Sander, H.-G., Scheider, T., Schmidt, T., Schneider, D., Schneider, E., Schwarz, R., Silvestri, A., Solarz, M., Spiczak, G.M., Spiering, C., Starinsky, N., Steele, D., Steffen, P., Stokstad, R.G., Streicher, O., Sun, Q., Taboada, I., Thollander, L., Thon, T., Tilav, S., Usechak, N., Vander Donckt, M., Waick, C., Weinheimer, C., Wiebusch, C.H., Wischnewski, R., Wissing, H., Woschnagg, K., Wu, W., Yodh, G. and Young, S. 2001. Observation of high-energy neutrinos with Cerenkov detectors embedded deep in Antarctic ice. *Nature*, **410**(6827), LBNL-47417.

- Apps, John A., Xu, Tianfu and Pruess, Karsten. 2001. Carbon dioxide disposal in deep aquifers: A comparison between modeled and real systems. *abstract*. Boston, MA. May 29-June 2, 2001. LBNL-47636 Abs.
- Arehart, G. B., Chakurian, A. M., Tretbar, D. R., Christensen, J. N., McInnes, B. A. and Donelick, R. A. 2003. Review of radioisotope dating of Carlin-type deposits in the Great Basin, western North America and implications for deposit genesis. *Economic Geology*, **98**, pp. 235-248, LBNL-51210.
- Asner, G.P., Neff, J.C., Riley, W.J., Jackson, R. and Matson, P.A. 2002. Dissolved organic carbon and nutrient modeling in terrestrial ecosystems, LBNL-50316.
- Asner, G.P. and Townsend, A.R. 2002. Physical and biogeochemical controls over terrestrial ecosystem responses to nitrogen deposition. *Biogeochemistry*, **54**, pp. 1-39, LBNL-48494.
- Asner, G.P., Townsend, A.R., Riley, W.J., Neff, J.C., Matson, P.A. and Cleveland, C.C. 2001. Physical and biogeochemical controls over terrestrial ecosystem responses to nitrogen deposition. *Biogeochemistry*, **54**(1), pp. 1-39, LBNL-48494.
- Astheimer, Robert, Bennett, Kristin, Brown Jr., Gordon E., Hoy, Jeffrey, Jones, Keith W., Sturchio, Neil C., Sutton, Stephen R., Waychunas, Glenn A. and Woodward, Nicholas B. 2000. Inside rocks. *Geotimes*, **45**(11), pp. 20-23, LBNL-48551.
- Bakradze, N., Sokhadze, V., Abuladze, M., Asatiani, N., Sapojnikova, N., Kartvelishvili, T.L., Tsibakhashvili, N.Y., Namchevadze, E., Tabatadze, L., Lejava, L. and Holman, H.-Y.N. 2003. A calorimetric characterization of Cr(VI)-reducing arthrobacter oxydans at different phases of the cell growth cycle, LBNL-53388.
- Balkwill, D., Chen, J., DeFlau, M., Dobbs, F., Dong, H., Fredrickson, J., Fuller, M., Green, M., Ginn, T., Griffin, T., Holben, W., Hubbard, S., Johnson, W., Long, P., Maillonx, B., Majer, E., McInerney, M., Murray, C., Onstott, T., Phelps, T., Scheibe, T., Swift, D., White, D. and Wobber, F. 2001. Breakthroughs in Field-Scale Bacterial Transport EOS, **82**: pp. 417-425, LBNL-48440 Abs.
- Bansal, Reeshidev, Imhof, Matthias G. and Daley, Thomas. 2002. Seismic characterization of fractures in a naturally fractured gas reservoir. *Society of Exploratory Geophysics International Exposition and 72nd Annual Meeting*. Salt Lake City, Utah. October 6-11, 2002. LBNL-53971 Ext. Abs.
- Barenblatt, G.I., Patzek, T.W., Prostokishin, V.M. and Silin, D.B. 2002. Oil deposits in diatomites: A new challenge for subterranean mechanics. *SPE/DOE Thirteen Symposium on Improved Oil Recovery*. Tulsa, OK. April 13-17, 2002. LBNL-49509.
- Barenblatt, G.I., Patzek, T.W. and Silin, D.B. 2002. The mathematical model of non-equilibrium

- effects in water-oil displacement, LBNL-49484.
- Barenblatt, G.I.; Patzek, T.W.; Silin, D.B. 2002. The mathematical model of non-equilibrium effects in water-oil displacement. *SPE/DOE 13th Symposium on Improved Oil Recovery*. Tulsa, Oklahoma. April 13-17, 2002. pp. 10, LBNL-49484.
- Barhen, Jacob, Berryman, James G., Borcea, Liliana, Dennis, John, de Groot-Hedlin, Catherine, Gilbert, Freeman, Gill, Philip, Heinkenschloss, Matthias, Johnson, Lane, McEvelly, Tom, More, Jorge, Newman, Gregory, Oldenburg, Douglas, Parker, Paul, Porto, Bill, Sen, Mrinal, Torczon, Virginia, Vasco, Don and Woodward, Nicholas B. 2000. Optimization and geophysical inverse problems, LBNL-46959.
- Bashford, Kathy E., Miller, Norman L. and Strem, Eric. 2002. Analysis of potential hydrological responses to climate change within the San Joaquin River Basin. *Second Federal Interagency Hydrologic Modeling Conference*. Las Vegas, NV. July 28-August 1, 2002. LBNL-51394 Abs.
- Battistelli, Alfredo and Pruess, Karsten. 2001. Il codice TMVOC per la simulazione numerica del trasporto di composti organici nel sottosuolo in condizioni multifase. *Bolletina della Societa Italiana della Scienza del Suolo*, **50**(3), pp. 723-731, LBNL-51362.
- Becker, A., Morrison, H.F. and Pandit, T. 2003. Bandwidth requirements for metal detectors. *EAGE Annual Meeting 2003*. Stavanger, Norway, LBNL-52108 Ext. Abs.
- Benson, S. 2000. Earth Sciences Division Annual Report 1999-2000, LBNL-47002.
- Benson, Sally and Goldstein, Norman. 2001. Earth Sciences Division Annual Report 2000 - 2001, LBNL-48899.
- Benson, Sally, Hepple, Robert, Apps, John, Tsang, Chin Fu and Lippmann, Marcelo. 2002. Comparative evaluation of risk assessment, management and mitigation approaches for deep geological storage of CO₂, LBNL LBNL-51170.
- Benson, Sally and Myer, L. 2001. The GEO-SEQ project: First year status report. *NETL Conference*. Pittsburgh, PA. May 15-17, 2001. LBNL-47189 Abs.
- Benson, S.M. 2000. *Comparison of three options for geologic sequestration of CO₂ - a case study for California*. In 13-16, August, Ed, LBNL-46365.
- Benson, Sally M. 2000. *The combined influence of oxidation/reduction and transport processes in selenium contaminated sediments*. In January 15-19, 2000, Ed, LBNL-44866 Abs.
- Benson, Sally M. 2000. *An overview of Geologic Sequestration of CO₂*. In July 23-28, 2000, Ed, LBNL-46702.
- Benson, Sally M. 2001. Approximate analytical solution for calculating pressure buildup at CO₂

- injection wells in brine formations. Pittsburgh, PA. May 15-17, 2001. LBNL-47100 Abs.
- Benson, Sally M. 2001. *Effects of reservoir heterogeneity and gravity override on pressure buildup and fall-off in CO₂ injection wells*. In 3-6, June, Ed, Denver, CO, LBNL-47101 Abs.
- Benson, Sally M. 2001. Geologic sequestration of carbon dioxide: Prospects and challenges. San Francisco, CA. December 15-19, 2001. LBNL-47098 Abs.
- Benson, Sally M., Amthor, Jeff, Bishop, Jim and Caldeira, Ken. 2000. The scientific challenges of carbon sequestration. *American Geophysical Union Annual Meeting*. San Francisco, CA. December 15-19, 2000. LBNL-47097 Abs.
- Benson, Sally M., Dorchak, Thomas, Jacobs, Gary, Ekmann, James, Bishop, Jim and Grahame, Thomas. 2000. Carbon dioxide reuse and sequestration: The state of the art today. *ENERGEX 2000*. Las Vegas, NV. July 23-28, 2000. Miriam Balaban, International Science Services, LBNL-46701.
- Benson, Sally M., Hovorka, Susan and Pruess, Karsten. 2001. Identification of reservoir parameters influencing the sequestration capacity of brine formations: A case study for the Frio/Oakville formations, Texas. Pittsburgh, PA. May 15-17, 2001. LBNL-47099 Abs.
- Benson, Sally M. and Myer, Larry R. 2000. The GEO-SEQ project. *Proceedings of the Fifth International Conference on Greenhouse Gas Control Technologies*. Cairns, Australia. August 13-16, 2000. pp. 337-341, LBNL-46230.
- Benson, S.M. and Myer, L.R. 2000. Advances in geologic sequestration: identifying and addressing key issues. Reno, NV, LBNL-46709 Abs.
- Benson, Sally M., Myer, Larry R., Byrer, Charles, Cole, David, Doughty, Christine A., Gunter, William, Hoversten, G. Michael, Hovorka, Susan, Johnson, James W., Knauss, Kevin G., Kovscek, Anthony, Law, David, Lippmann, Marcelo J. AUTHOR-Majer, Ernest L., van der Meer, Bert, Moline, Gerry, Newmark, Robin L., Oldenburg, Curtis M., Orr Jr., Franklin M., Pruess, Karsten and Tsang, Chin-Fu. 2002. The GEO-SEQ project: A status report. (*GHGT6*) *Greenhouse Gas Control Technologies 6*. Kyoto, Japan. 10/01/02 -- 10/04/02. LBNL-49688 Abs.
- Benson, Sally M. and Zawislanski, Peter. 2000. *Field-measured selenium re-oxidation rates*. In 28, March, Ed, San Francisco, CA, LBNL-45452 Abs.
- Berdahl, P., Espinoza-Nava, L., Littlejohn, D., Lucas, D. and Perry, D.L. 2000. Near-Infrared Turbidity of Beta-FeOOH Particle Suspensions. *Applied Spectroscopy*, **54**(2), pp. 262-267, LBNL-43582.
- Berry, J.A., Helliker, B., P., Bakwin, Billesbach, D., Birks, J., Davis, K., Denning, S.,

- Ehleringer, J., Fisher, M., Jensen, M., Miller, J., Riley, W., Schulz, K. and Torn, M. 2003. Daily CO₂ and isotopic gradients in the lower atmosphere, LBNL-53037 Abs.
- Bessinger, Brad, Cook, Neville G. W., Benito, Pascual, Myer, Larry, Nakagawa, Seiji, Nihei, Kurt and Suarez-Rivera, Roberto. 2003. The role of compressive stresses in jointing on Vancouver Island, British Columbia. *Journal of Structural Geology*, **25**(6), pp. 983-1000, LBNL-51104.
- Bhatt, D., Newman, J. and Radke, C.J. 2001. 2002. Molecular Simulations of Disjoining-Pressure Isotherms for Free Liquid, Lennard-Jones Thin Films. *Journal of Physical Chemistry B*, **106**(25), pp. 6529-6537, LBNL-54568.
- Bhupathiraju, V K, Krauter, P, Holman, H-Y, Conrad, M E and Daley, P F. 2002. Assessment of in-situ bioremediation at a refinery waste-contaminated site and an aviation gasoline contaminated site. *Biodegradation*, **13**(2), pp. 79-90, LBNL-50048.
- Bill, Markus, Conrad, Mark E. and Goldstein, Allen H. 2004. Stable carbon isotope composition of atmospheric methyl bromide. *Geophysical Research Letter*, **31**, pp. L04109; doi: 04110.01029/04203GL018639, LBNL-54686.
- Billesbach, David, Fischer, Marc L., Torn, Margaret S. and Berry, Joe. 2001. A highly portable, rapidly deployable system for eddy covariance measurements of CO₂ fluxes. *Agricultural & Forest Meteorology*, LBNL-48953.
- Bird, J.A. and Torn, M.S. 2002. Initial decomposition and humification dynamics of Ponderosa Pine fine roots and needles. *American Geophysical Union (AGU) Fall Meeting 2002*. San Francisco, CA. December 5-10, 2002. EOS, **83**(47), LBNL-53274 Abs.
- Birkholzer, J. 2003. Comment on "penetration of a liquid finger down a fracture into superheated rock. *Water Resources Research*, **39**(4), pp. 9-1--9-21, LBNL-50043.
- Birkholzer, J. 2003. Penetration of Liquid Fingers into Superheated Fractured Rock. *Water Resour. Res.*, **39**(4), LBNL-50042.
- Birkholzer, J. 2003. Abstraction of drift seepage, MDL-NBS-HS-000019 REV00A LBID-2475.
- Birkholzer, J. and Ho, C.K. 2002. A systematic study of episodic localized infiltration into superheated fractured rock. *The Geological Society of America 2002 Annual Meeting*. Denver, CO. October 27-30, 2002. LBNL-51090 Abs.
- Birkholzer, J. and Ho, C.K. 2003. A Probabilistic Analysis of Episodic Preferential Flow Into Superheated Fractured Rock. *Journal of Hydrology*, LBNL-51893.
- Birkholzer, Jens, Mukhopadhyay, Sumit and Tsang, Yvonne. 2003. Analysis of the vaporization barrier above waste emplacement drifts. *10th International High-Level Radioactive Waste Management Conference*. Las Vegas NV. March 30 - April 3, 2003. LBNL-51539.

- Birkholzer, Jens, Mukhopadhyay, Sumit and Tsang, Yvonne. 2003. Modeling water seepage into heated waste emplacement drifts at Yucca Mountain. *TOUGH2 Symposium 2003*. Berkeley. May 12-14, 2003. LBNL-52500.
- Birkholzer, Jens T. 2002. TH_PULSE: Program for Calculating Infiltration of Episodic Liquid Fingers in Superheated Rock Fractures - Theory, User's Manual and Sample Applications LBNL/PUB-3277.
- Birkholzer, J.T., Mukhopadhyay, S. and Tsang, Y. 2003. Drift-Scale Coupled Processes (DST and TH Seepage) Models, MDL-NBS-HS-000015 REV00, BSC, Las Vegas, NV, pp. 238 LBID-2469.
- Birkholzer, J. T., Mukhopadhyay, S. and Tsang, Y. W. 2003. Prediction of water seepage into a geologic repository for high-level radioactive waste. *Nuclear Technology*, LBNL-53893.
- Birkholzer, J.T., Mukhopadhyay, S. and Tsang, Y.W. 2003. Modeling seepage into heated waste emplacement tunnels in unsaturated fractured rock. *Vadose Zone*, LBNL-53894.
- Birkholzer, J.T. and Tsang, Y.W. 2000. Modeling the thermal-hydrologic processes in a large-scale underground heater test in partially saturated fractured tuff. *Water Resources Research*, **36**(6), pp. 1431-1448, LBNL-43596.
- Bishop, James K. and Davis, Russ E. 2000. Autonomous observing strategies for the ocean carbon cycle. *Energex 2000: Proceedings of the 8th International Energy Forum*. Las Vegas, NV. July 23-28, 2000. LBNL-46860.
- Bishop, J. K. B. and Davis, R.E. 2002. Robotic Observations of Dust Storm Enhancement of Carbon Biomass in the North Pacific. *Science*, **298**(5594), pp. 817-821, LBNL-50120.
- Bishop, J.K.B., Guay, C.K., Sherman, J.T., Moore, C. and Davis, R.E. 2001. Prospects for aspects for a "C-ARGO": A new approach for exploring ocean carbon system variability. *International Workshop on Autonomous Measurements of Biogeochemical Parameters in the Ocean*. Honolulu, HI. February 20-22, 2001. LBNL-48144 Abs.
- Bishop, James K.B., Wood, Todd J., Davis, Russ E. and Sherman, Jeffrey T. 2003. Robotic observations of enhanced carbon biomass and export at 55s during SOFeX. *Science*, LBNL-53136.
- Bodvarsson, G. 2000. Lawrence Berkeley National Laboratory and the Yucca Mountain Project PUB-837.
- Bodvarsson, G, Finsterle, S., Liu, H.-H., Oldenburg, C. M., Pruess, K., Sonnenthal, E. and Wu, Y-S. 2000. Flow and transport modeling of subsurface systems. *Vadose Zone Science and Technology Solutions*, **Chapter 5**, Battelle Press, OH, pp 591-827, LBNL-46025.

- Bodvarsson, Gudmundur S. 2000. *Modeling and monitoring of geothermal systems*. In 28-30, May, Ed, Kyushu, JAPAN, LBNL-46023.
- Bodvarsson, Gudmundur S. 2000. *The Geysers and Dixie Valley high-enthalpy systems in the United States*. In 28-30, May, Ed, Kyushu, JAPAN, LBNL-46024.
- Bodvarsson, G.S. 2000. *Unsaturated zone flow and transport modeling of Yucca Mountain, Nevada - Fiscal Year 1998 report*, LBNL-45061.
- Bodvarsson, G.S. 2000. A methodology of estimating hydraulic parameters for flow and transport models in the unsaturated zone of Yucca Mountain, LBNL-46268.
- Bodvarsson, G.S. 2001. Thermohydrological effects and interactions, LBNL-48294.
- Bodvarsson, Gudmundur S. 2001. Numerical studies of enthalpy and CO₂ transients in two-phase wells, LBNL-49113.
- Bodvarsson, Gudmundur S. 2001. Model predictions of the Svartsengi Reservoir, Iceland, LBNL-49117.
- Bodvarsson, G.S. 2001. FY01 Supplemental Science and Performance Analysis: Volume 1, scientific bases and analyses, LBNL-48293.
- Bodvarsson, G.S. 2002. Vadose zone research at Yucca Mountain - Results obtained and applications to other sites and problems, LBNL-51409 Abs.
- Bodvarsson, G.S. 2002. Testing and modeling of the unsaturated zone at Yucca Mountain. *The Geological Society of America 2002 Denver Annual Meeting*. Denver, CO USA. October 27-30, 2002. LBNL-51115 Abs.
- Bodvarsson, G.S., Ahlers, C.F., Cushey, M., Dove, F.H., Finsterle, S.A., Haukwa, C.B., Hinds, J., Ho, C.K., Houseworth, J., Hu, Q., Liu, H.H., Pendleton, M., Sonnenthal, E.L., Unger, A.J., Wang, J.S.Y., Wilson, M. and Wu, and Y.-S. 2000. Unsaturated Zone Flow and Transport Model Process Model Report, TDR-NBS-HS-000002 REV 00 LBID-2337.
- Bodvarsson, G.S., Birkholzer, J.T., Finsterle, S., Liu, H.H., Rutqvist, J. and Wu, Y.S. 2003. The use of TOUGH2/ITOUGH2 in support of the Yucca Mountain Project: Successes and limitation. *TOUGH Symposium 2003*. LBNL, Berkeley CA. May 12- 14, 2003. Proceedings of TOUGH Symposium, LBNL-52594.
- Bodvarsson, G.S., Fabryka-Martin, A., Kivicklis, E., Patterson, R., Peters, M., Wang, J.S.Y. and Wu, Y.S. 2000. The hydrologic and geochemical setting of Yucca mountain, LBNL-46972.
- Bodvarsson, G.S. and Gaulke, S. 2001. Effects of noncondensable gases on fluid recovery in fractured geothermal reservoirs LBNL-49119.

- Bodvarsson, G.S., Kwicklis, E., Shan, C. and Wu, Y.S. 2003. Estimation of percolation flux from borehole temperature data at Yucca Mountain, Nevada. *Journal of Contaminant Hydrology*, **62-63**(Special Issue SI), pp. 3-22, LBNL-41866.
- Bodvarsson, Gudmundur S. and Lai, Cheng Hsien. 2001. Studies of injection into naturally fractured reservoirs, LBNL-49115.
- Bodvarsson, G.S., Liu, H.H., Liu, J and Wu, Y.S. 2000. Recent modeling studies of unsaturated flow and transport at Yucca Mountain, Nevada. *Fall Geological Society of America Annual Meeting & Exposition*. Reno, NV, LBNL-46734 Abs.
- Bodvarsson, Gundamur S. and Pruess, Karsten. 2001. Modeling studies of geothermal systems with a free water surface LBNL-49102.
- Bodvarsson, Gudmundur S., Pruess, Karsten, Stafansson, Valgardur, Bjornsson, Sveinbjorn and Ojiambo, Sebastian B. 2001. East Olkaria geothermal field, Kenya. 1. History match with production and pressure decline, LBNL-49104.
- Bodvarsson, Gudmundur S., Pruess, Karsten, Stafansson, Valgardur, Bjornsson, Sveinbjorn and Ojiambo, Sebastian B. 2001. East Olkaria geothermal field, Kenya. 2. Predictions of well performance and reservoir depletion, LBNL-49105.
- Bodvarsson, Gudmundur S., Pruess, Karsten, Stefansson, Valgardur and Eliasson, Einar T. 2001. A summary of modeling studies of the Krafla Geothermal Field, Iceland, LBNL-49120.
- Bodvarsson, Gudmundur.S. and Stefansson, Valgardur. 2001. Reinjection into geothermal reservoirs, LBNL-49116.
- Bodvarsson, Gudmundur S. and Stefansson, Valgardur. 2001. Some theoretical and field aspects of reinjection in geothermal reservoirs, LBNL-49114.
- Bodvarsson, G.S., Wang, J., Unger, A., Liu, J., Hinds, J., Haukwa, C., Sonnenthal, E., Tsang, C-F. and Rutqvist. 2001. Unsaturated zone flow LBID-2364.
- Bodvarsson, G.S., Wu, Y-S. and Zhang, Keni. 2002. Discrete-flow-path development in unsaturated fractures at Yucca Mountain. *The Geological Society of America 2002 Denver Annual Meeting*. Denver, CO USA. October 27 -30, 2002. LBNL-51079 Abs.
- Bodvarsson, G.S., Wu, Yu-Shu and Zhang, Keni. 2003. Development of the discrete flow paths in unsaturated fractures at Yucca Mountain, Nevada. *Journal of Contaminant Hydrology*, **62-63**(Special Issue), pp. 23-42, LBNL-49863.
- Borgesson, Lennart, Chijimatsu, Masakasu, Fujita, Tomoo, Nguyen, T.S., Rutqvist, Jonny and Jing, Lanru. 2001. Thermo-hydro-mechanical characterization of a bentonite based buffer material by laboratory tests and numerical back analyses. *International Journal of Rock*

Mechanics and Mining Sciences, **38**, pp. 105-127, LBNL-46132.

- Borglin, Sharon , Hazen, Terry, Joyner, Dominique and Huang, Rick. 2003. Effects of environmental stressors on signature lipid biomarkers in *Desulfovibrio vulgaris*. *American Society for Microbiology 104th Meeting*. New Orleans, LA. May 19-23, 2004. LBNL-54235 Abs.
- Borglin, Sharon, Hazen, Terry and Oldenburg, Curtis. 2002. Comparison of leachate quality from aerobic and anaerobic municipal solid waste bioreactors. *American Geophysical Union*. San Francisco, CA. December 6-10 , 2002. LBNL-52053.
- Borglin, Sharon, Hazen, Terry and Oldenburg, Curtis. 2002. Smart storage: Stabilization of stored and landfilled waste using aerobic and anaerobic biotreatment technology. *Partners in Environmental Technology Symposium*. Washington, DC. December 3-5, 2002. LBNL-52054.
- Borglin, Sharon, Hazen, Terry and Oldenburg, Curtis. 2002. Biotreatment of municipal solid waste in aerobic and anaerobic laboratory bioreactors. *Intercontinental Landfill Research Symposium*. Asheville, North Carolina. October 13-16 , 2002. LBNL-52055.
- Borglin, Sharon, Hazen, Terry, Oldenburg, Curt and Zawislanski, Peter. 2004. Comparison of Aerobic and Anaerobic Biotreatment of Municipal Solid Waste. *Journal of the Air and Waste Management Association*, **54**, LBNL-50576.
- Borglin, Sharon, Hazen, Terry C., Joyner, Dominique and Huang, Rick. 2004. Effects of environmental stressors on signature lipid biomarkers in *Desulfovibrio vulgaris*. *10th Annual International Symposium on Microbial Ecology ISME-10 Microbial Planet: Sub-Surface to Space*. Cancun, Mexico. August 22-27, 2004. LBNL-54809 Abs.
- Borglin, S., Moridis, George J. and Oldenburg, Curtis M. 2000. Experimental studies of the flow of ferrofluid in porous media. *Transport in Porous Media*, **41**, pp. 61-80, LBNL-40126.
- Borglin, Sharon E., Hazen, Terry C., Oldenburg, Curt M. and Zawislanski, Peter T. 2001. Mesoscale laboratory models of the biodegradation of municipal landfill materials. *American Geophysical Union (AGU) Fall Meeting 2001*. San Francisco, CA. Dec. 10-14, 2001. LBNL-48884 Abs.
- Borglin, Sharon E., Hazen, Terry C., Oldenburg, Curt M. and Zawislanski, Peter T. 2001. Laboratory investigation of the aerobic biodegradation of municipal landfill materials, LBNL-47819 Abs.
- Borglin, Sharon E., Hazen, Terry C., Oldenburg, Curt M. and Zawislanski, Peter T. 2001. Aerobic biodegradation of municipal landfill materials, LBNL-47979.
- Borglin, Sharon E., Zawislanski, Peter T. and Benson, Sally M. 2001. Investigation of selenium biotransformations in aquatic ecosystems, LBNL-48481 Abs.

- Brekke, L.D., Miller, N. L., Bashford, K.E., Quinn, N. W. T. and Dracup, J.A. 2002. Climate change uncertainty impacts for the San Joaquin River Basin water resources. *Journal of American Water Resources Association*, **36**(3), pp. 657-661, LBNL-51393.
- Brekke, Levi D., Miller, Norman L., Hilts, Derek, Quinn, Nigel W.T. and Dracup, John A. 2001. Climate change impacts on San Joaquin River basin water allocation. *ASCE Journal of Water Resources Planning and Management*, LBNL-48546.
- Brekke, L.D., Miller, N.L., Quinn, N. W. T., Dracup, J.A. and Hilts, D. 2001. Climate change impacts on water supply in San Joaquin Basin, California. *Journal of Water Resources and Management, ASCE*, LBNL-44930.
- Brink, J.L., Patzek, T.W., Silin, D.B. and Fielding, E.J. 2002. Lost Hills field trial - incorporating new technology for reservoir management SPE 77646, LBNL-50562.
- Brodie, Eoin, Hazen, Terry C., Wan, Jiamin M., Tokunaga, Tetsu K., Larsen, Joern , Olsen, Keith, Joyner, Dominique, Andersen, Gary L. and Firestone, Mary K. 2003. Biogeochemistry of microbial communities associated with diffusion limited reduction of U(VI) and NO₃⁻ as co-contaminants in natural sediments and soils. *American Society for Microbiology 104th Meeting*. New Orleans, LA. May 19-23, 2004. LBNL-54232 Abs.
- Brodie, Eoin, Larsen, Joern, Hazen, Terry C., Wan, Jiamin M., Tokunaga, Tetsu K., Joyner, Dominique, Andersen, Gary L., DeSantis, Todd, Richardson, Paul and Firestone, Mary. 2004. High density oligonucleotide array monitoring of bacterial community dynamics during carbon stimulated uranium bioremediation. *10th Annual International Symposium on Microbial Ecology ISME-10 Microbial Planet: Sub-Surface to Space*. Cancun, Mexico. August 22-27, 2004. LBNL-54787 Abs.
- Byrne, Roger, Ingram, B. Lynn, Starratt, Scott, Malamud-Roam, Frances, Collins, Joshua N. and Conrad, Mark E. 2001. Carbon-isotope, diatom, and pollen evidence for late holocene salinity change in a brackish marsh in the San Francisco estuary. *Quaternary Research*, **55**(1), pp. 66-76, LBNL-48560.
- Campbell, Chris and Garrido, F. 2003. Spatial and Temporal Variability of Soil Processes: Implications for Methods Selection and Characterization Studies. Alvarez-Benedi, J. and Munoz-Carpena, R., Eds. *Soil-Water Solute Process Characterization: An Integrated Approach*. CRC Press, Boca Raton, FL, USA, LBNL-53569.
- Campbell, Chris G., Garrido, F. and Ghodrati, M. 2003. Leaf Litter and Solute Transport in a Woodland Hillslope Spoil. *Soil Science*, pp. 34, LBNL-52522.
- Campbell, Janet, Antoine, David, Armstrong, Robert, Arrigo, Kevin, Balch, William, Barber, Richard, Behrenfeld, Michael, Bidigare, Robert, Bishop, James, Carr, Mary-Elena, Esaias, Wayne, Falkowski, Paul, Hoepffner, Nicolas, Iverson, Richard, Kiefer, Dale, Lohrenz, Steven, Marra, John, Morel, Andre, Ryan, John, Vedernikov, Vladimir, Waters,

- Kirk, Yentsch, Charles and Yoder, James. 2002. Comparison of algorithms for estimating ocean primary production from surface chlorophyll, temperature and irradiance. *Global Biogeochemical Cycles*, **16**(3), pp. 10.1029, LBNL-48412.
- Cappa, Christopher D., Hendricks, Melissa B., DePaolo, Donald J. and Cohen, Ronald C. 2003. Isotopic fractionation of water during evaporation. *Journal of Geophysical Research-Atmospheres*, **108**(D16), pp. 4525, LBNL-54025.
- Casadei, M., Dietrich, W. E. and Miller, N L. 2003. Testing a model for predicting the timing and location of debris flow initiation in soil mantled landscape. *Earth Surface Processes*, **28**(9), pp. 925-950, LBNL-51314.
- Chang, Li-Yang, Proctor, Angie and Stringfellow, William T. 2002. Kinetic parameters for the biological treatment of mixed wastes containing acetonitrile and methanol, *LBNL LBID-2433*.
- Chauhan, Sadhana, Mendez, Loyda, Montanez, Jessica and Hazen, Terry C. 2001. Gaseous in-situ bioremediation of benzo(a)pyrene in soil. San Diego, CA. June 2001. LBNL-47637 Abs.
- Chen, Jinsong and Hoversten, G. Michael. 2003. Joint stochastic inversion of geophysical data for reservoir parameter estimation. *SEG Annual Meeting*. Dallas, TX. October 26-31, 2003. LBNL-52489 Abs.
- Chen, Jinsong and Hubbard, Susan. 2004. Bayesian Integration of Geophysical Data for Subsurface Parameter Estimation. *SAGEEP 2004*. Colorado Springs, CO. February 22-26, 2004. LBNL-53645 Abs.
- Chen, Jinsong, Hubbard, Susan, Fienen, Michael, Mehlhorn, Tonia and Watson, David. 2003. Estimating Hydrogeological Zonation Using High-Resolution Geophysical Data and Markov Chain Monte Carlo Methods. *American Geophysical Union(AGU) Fall Meeting 2003*. San Francisco, CA. December 8-13, 2003. EOS. Trans. AGU, **84**(46): pp. Abstract #H21F-04, LBNL-53743 Abs.
- Chen, Jinsong, Hubbard, Susan and Peterson, John. 2004. A Comparison between Hydrogeophysical Characterization Approaches Applied to Granular Porous and Fractured Media. *International Symposium on Fractured Rock*. Berkeley, CA. February 10-12, 2004. LBNL-54157 Ext. Abs.
- Chen, Jinsong, Hubbard, S. and Rubin, Y. 2001. Estimating the hydraulic conductivity at the South Oyster site from geophysical tomographic data using Bayesian techniques based on the normal linear regression model. *Water Resources Research*, **37**(6), pp. 1603-1613, LBNL-47682.
- Chen, Jinsong, Hubbard, Susan, Rubin, Yoram, Murray, Chris and Majer, Ernest. 2002. Geochemical characterization using geophysical data and Markov chain Monte Carlo

- methods. *American Geophysical Union (AGU) Fall Meeting*. San Francisco, CA. December 5-10, 2002. EOS Transactions, **83**(47), LBNL-51406 Abs.
- Chen, Jinsong, Hubbard, Susan, Rubin, Yoram, Murray, Chris, Roden, Eric and Majer, Ernest;. 2003. Geochemical Characterization Using Geophysical Data: A Case Study at the South Oyster Bacterial Transport Site in Virginia. *Water Resources Research*, LBNL-51980.
- Chen, Jinsong, Hubbard, Susan, Rubin, Yoram, Murray, Chris, Roden, Eric and Majer, Ernest. 2003. Geochemical Characterization Using Geophysical Data and Markov Chain Monte Carlo Methods: A Case Study at the South Oyster Bacterial Transport Site in Virginia. *Water Resources Research*, LBNL-54059.
- Chen, Jinsong and Rubin, Yoram. 2003. An effective Bayesian model for lithofacies estimation using geophysical data. *Water Resources Research*, **39**(5), pp. 1118, doi: 1110.1029/2002WR001666, LBNL-52817.
- Choi, H., Lim, H.N. and Kim, J. 2000. *Ozone-enhanced remediation of petroleum hydrocarbon-contaminated soil*. In 22-25, May, Ed. Second International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA, LBNL-50320.
- Christenson, B.W., Mroczek, E.K., Kennedy, B.M., van Soest, T., Steward, M.K. and Lyon, G. 2002. Ohaaki reservoir chemistry: Characteristics of an arc-type hydrothermal system in the Taupo Volcanic Zone, New Zealand. *Journal of Volcanology & Geothermal Research*, **115**(1-2), pp. 53-82, LBNL-48570.
- Cole, D., Doughty, C. A., Hoversten, G. M., Hovorka, S. D., Knauss, K. G., Kocscek, A. R., Law, D. H.-S., Lippmann, M. J., Myer, L. R., Newmark, R. L., Oldenburg, C. M. and Pruess, K.; 2002. GEO-SEQ Project Quarterly Status and Cost Report, June 1--August 31, 2002, *LBNL*, pp. 45 LBNL-51884.
- Commer, Michael and Newman, Gregory. 2004. A Parallel Finite-Difference Approach for Three-Dimensional Transient Electromagnetic Modeling With Galvanic Sources. *Geophysics*, LBNL-54725.
- Conrad, M. 2000. Carbon isotope analyses of CO₂ evolved during the initial stages of the drift scale test, LBNL-45069.
- Conrad, Mark and DePaolo, Donald J. 2004. Carbon Isotopic Evidence for Biodegradation of Organic Contaminants in the Shallow Vadose Zone of the Radioactive Waste Management Complex. *Vadose Zone Journal*, **3**(1), pp. 143-153, LBNL-53748.
- Conrad, Mark E. and Sonnenthal, Eric L. 2001. Implications of the drift scale heater test at Yucca Mountain for epithermal mineralization. *Geological Society of America 2001 Annual Meeting*. Boston, MA. November 5, 2001. LBNL-48654 Abs.
- Conrad, M. S. and Faybishenko, B. 2002. Isotopic tracers of flow and transport through the

- vadose zone. Looney, B. B. and Falta, R., Eds. *Vadose Zone Technology and Science Solutions*. Batelle Press, Columbus, OH, pp. 298-303, LBNL-50321.
- Constantz, J., Cox, Marisa H. and Su, G.W. 2003. Comparison of Heat and Bromide as Tracers of Stream Exchanges with Shallow Ground Water Along the Santa Clara River, CA. *Ground Water*, **41**(5), pp. 647-656, LBNL-52974.
- Cook, D.R., Liaw, Y.P., Sisterson, D.L. and Miller, N.L. 2000. Production of nitrogen oxides by a large spark generator. *Journal of Geophysical Research-Atmospheres*, **105**(D6), pp. 7103-7110, LBNL-46485.
- Cook, P.J., Salve, R., Freifeld, B. M. and Tsang, Y. T. 2001-2003. A measurement system for systematic hydrological characterization of unsaturated fractured welded tuff in a mined underground tunnel. *Ground Water*, **41**, pp. 449-457, LBNL-48163.
- Cooley, H.S., Riley, W.J. and Torn, M.S. 2003. Interactions between land cover change and climate in a coupled regional climate model, LBNL-53055 Abs.
- Cooley, H.S., Riley, W.J. and Torn, M.S. 2003. Effect of harvest on regional climate and soil moisture and temperature, in chapman conference on ecosystem interactions with land use change, LBNL-53039 Abs.
- Daley, T., Gritto, R., Majer, E. and West, Phillip. 2003. Tube-wave suppression in single-well seismic acquisition. *Geophysics*, **68**(3), pp. 863-869, LBNL-49769.
- Daley, T., Nihei, K., Myer, L., Majer, E., Queen, J., Fortuna, M. A., Murphy, J. O. and Coates, Richard T. 2001. Finite-difference seismic modeling of discrete fractures in a San Juan basin gas reservoir. *American Geophysical Union Annual Meeting*. San Francisco, CA. December 10-14, 2001. LBNL-48956 Abs. & Poster.
- Daley, Thoms M. 2000. Calibration test of DAS-2 Borehole ADC LBNL-45268.
- Daley, Thomas M and Cox, Dale. 2001. Orbital vibrator seismic source for simultaneous P- and S-wave crosswell acquisition. *Geophysics*, **66**(5), pp. 1471-1480, LBNL-43070.
- Daley, Thomas M., Feighner, Mark A. and Majer, Ernest L. 2000. Monitoring underground gas storage in a fractured reservoir using time lapse vsp LBNL-44876.
- Daley, Thomas M. and Gritto, Roland. 2001. Field test of INEEL tube-wave suppressor and LBNL borehole seismic system at Richmond Field Station, February 2001 LBNL-49015.
- Daley, T.M., Gritto, R., Korneev, V.A., Feighner, M.A., Majer, E.L. and Peterson, J.E. 2000. Surface-to-tunnel seismic tomography on kilometer scale at Yucca Mountain. *SAGEEP 2000*. Arlington, VA. February 20-24, 2000. LBNL-44537.
- Daley, Thomas M., Gritto, Roland and Majer, Ernest L. 2003. Single well seismic imaging of a

- gas-filled hydrofracture, Berkeley, CA LBNL-53601.
- Daley, Thomas M., Gritto, Roland, Majer, Ernest L. and West, Phillip. 2002. Tube-wave suppression in single-well seismic acquisition. *American Geophysical Union (AGU) Fall Meeting*. San Francisco, CA. December 5-10, 2002. EOS, **83**, LBNL-51461 Abs.
- Daley, Thomas M., Majer, Ernest L. and Gritto, Roland. 2000. Single well seismic imaging: Status report LBNL-45342.
- Daley, Thomas M., Majer, Ernest L. and Gritto, Roland. 2000. Progress and issues in single well seismic imaging. *Proceedings of the Annual Meeting of the Society of Exploration Geophysicists (SEG)*. Calgary, Alberta, Canada. August 6-11, 2000. LBNL-45230.
- Daley, T.M., Majer, E.L., Gritto, R. and Benson, S.M. 2000. Borehole seismic monitoring of CO2 injection in a diatomite reservoir. *American Geophysical Union Annual Meeting*. San Francisco, CA. December 15-19, 2000. LBNL-47291 Abs. & Poster.
- Daley, Thomas M., Majer, Ernest L. and Peterson, John E. 2001. Crosswell seismic imaging in a contaminated basalt aquifer - Final report. *Geophysics*, LBNL-45533.
- Daley, Thomas M., Majer, E.L., Peterson, J. E. and Roberts, Peter. 2001. Field monitoring of seismic stimulation sites LBNL-44536.
- Daley, T. M., Nihei, K. T., Myer, L. R., Majer, E. L., Queen, J. H., Fortuna, M., Murphy, J. and T., Coates. R. 2002. Numerical modeling of scattering from discrete fracture zones in a San Juan Basin gas reservoir. *SEG 72nd Annual International Exposition and Annual Meeting*. Salt Lake City, UT. October 6-11, 2002. pp. 109-112, LBNL-53754 Ext. Abs.
- Daley, T. M., Schoenberg, M., Rutqvist, J. and Nihei, K. 2003. Coupled modeling of time-lapse change in seismic propagation and permeability in fractured reservoirs due to fluid injection. *American Geophysical Union(AGU) Fall Meeting 2003*. San Francisco, CA. December 8-13, 2003. LBNL-53753 Abs.
- Das, Kaushik, Becker, Alex and Lee, Ki Ha. 2002. Experimental validation of the wavefield transformation of electromagnetic data. *Geophysical Prospecting*, **50**, pp. 441-451, LBNL-47466.
- Datta-Gupta, A., Nordaas, K., Yoon, Seongsik. and Vasco, D, W. 2000. Streamlines, ray tracing, and production tomography: Generalization to compressible flow. *Petroleum Geoscience*, **7**(SI), pp. S75-S86, LBNL-50625.
- Datta-Gupta, A., Nordaas, K., Yoon, S. and Vasco, D.W. 2000. Stream-lines, ray tracing and production tomography: generalization to compressible flow. *Petroleum Geoscience*, **7**, pp. S75-S86, LBNL-46460.
- Datta-Gupta, A. and Vasco, D.W. 2001. Production tomography merges geophysics with

- reservoir engineering. *Oil and Gas Journal*, **99**(23), pp. 75-81, LBNL-48522.
- De, A., Silin, D. and Patzek, T. 2000. Waterflood surveillance and supervisory control, LBNL-46516.
- De La Rocha, Christina L. and DePaolo, Donald J. 2000. Isotopic Evidence for Variations in the Marine Calcium Cycle Over the Cenozoic. *Science*, **289**, pp. 1176-1178, LBNL-54018.
- DePaolo, Donald J., Bryce, Julia G., Dodson, Allen, Shuster, David L. and Kennedy, B.Mack. 2001. Isotopic evolution of Mauna Loa and the chemical structure of the Hawaiian plume. *Geochemistry Geophysics Geosystems*, **2**, pp. 41-43, LBNL-50611.
- DePaolo, Donald J., Conrad, Mark E. and Maher, Katherine. 2002. Evaporation effects on O and H isotopes in deep vadose zone pore fluids at Hanford, Washington: Implications for recharge and horizontal fluid movement. *Vadose Zone Journal*, LBNL-54026.
- DePaolo, Donald J., Conrad, Mark E., Maher, Katharine and Gee, Glendon W. 2004. Evaporation Effects on Oxygen and Hydrogen Isotopes in Deep Vadose Zone Pore Fluids at Hanford, Washington. *Vadose Zone*, **3**(1), pp. 220-232, LBNL-54301.
- DePaolo, D. J. and Daley, E. E. 2000. Neodymium isotopes in basalts of the southwest basin and range and lithospheric thinning during extension. *Chemical Geology*, **169**(1-2), pp. 157-185, LBNL-51633.
- DePaolo, Donald J. and Manga, Michael. 2003. Deep origin of hotspots - The mantle plume model. *Science*, **300**(5621), pp. 920-921, LBNL-54017.
- DeSantis, T.Z., Dubosarskiy, I., Murray, S.R. and Andersen, G.L. 2003. Comprehensive aligned sequence construction for automated design of effective probes (CASCADE-P) using 16S rDNA. *Bioinformatics*, **19**(12), pp. 1461-1468, LBNL-52352.
- Dickens, G. R. and Kennedy, B.M. 2000. Noble gases in methane hydrate from the Blake Ridge. *Proceedings of the Ocean Drilling Program. Scientific Results*. January 2000. **164**: pp. 165-170, LBNL-43992.
- Dobroskok, A. A., Linkov, A. M., Myer, L. and Roegiers, J.-C. 2001. On a new approach in micromechanics of soils and rocks. *38th American Rock Mechanics Symposium*. Washington, DC. July 8-10, 2001. Swets & Zeitlinger Lisse: pp. 1185-1190, LBNL-50822.
- Dobson, Patrick, Hulen, Jeffrey, Kneafsey, Timothy, J. and Simmons, Ardyth. 2001. The role of lithology and alteration on permeability and fluid flow at the Yellowstone Geothermal System, Wyoming. *26th Workshop on Geothermal Reservoir Engineering*. Stanford, CA. January 29-31, 2001. LBNL-47129.

- Dobson, Patrick, Hutten, Jeff, Kneafsey, Timothy, J. and Simmons, Ardyth. 2001. Permeability at Yellowstone: A natural analog for Yucca Mountain processes. *9th International High-Level Radioactive Waste Management Conference*. Las Vegas, NV. April 29 - May 3, 2001. LBNL-47051.
- Dobson, Patrick and Kneafsey, Timothy. 2003. Natural analogues for yucca mountain coupled processes: geothermal systems, LBNL-53872 Abs.
- Dobson, Patrick, Pan, L. and Hedegaard, R. 2003. Development of Numerical Grids for UZ Flow and Transport Modeling, ANL-NBS-HS-000015 REV01, BSC, Las Vegas, NV, pp. 92 LBID-2468.
- Dobson, Patrick, Salah, S., Spycher, Nicholas and Sonnenthal, Eric. 2003. Simulation of Water-Rock Interaction in the Yellowstone Geothermal System Using TOUGHREACT. *TOUGH Symposium 2003*. Berkeley, CA. May 12-14, 2003. pp. 6, LBNL-52550.
- Dobson, Patrick, Salah, S., Spycher, Nicholas and Sonnenthal, Eric. 2003. Simulation of Water-Rock Interaction in the Yellowstone Geothermal System Using TOUGHREACT. *Geothermics*, LBNL-52550 Jart.
- Dobson, P.F., Hulen, J., Kneafsey, T.J. and Simmons, A.M. 2002. Permeability at Yellowstone: A natural analog for Yucca Mountain, LBNL-50322.
- Dobson, Patrick F. and Kneafsey, Timothy J. 2001. Numerical simulation of tuff dissolution and precipitation experiments: Validation of thermal-hydrologic-chemical (THC) coupled-process modeling. *The 2001 AGU Fall Meeting*. San Francisco, CA. December 10-14, 2001. LBNL-48333 Abs.
- Dobson, Patrick F., Kneafsey, Timothy J., Hulen, Jeffrey and Simmons, Ardyth. 2003. Porosity, permeability, and fluid flow in the Yellowstone geothermal system, Wyoming. *Journal of Volcanology and Geothermal Research*, **123**(3-4), pp. 313-324, LBNL-50044.
- Dobson, Patrick F., Kneafsey, Timothy J., Sonnenthal, Eric L., Spycher, Nicolas and Apps, John A. 2003. Experimental and numerical simulation of dissolution and precipitation: Implications for fracture sealing at Yucca Mountain, Nevada. *Journal of Contaminant Hydrology*, **62-63**, pp. 459-476, LBNL-48872.
- Doughty, C. 2000. Numerical model of water flow in a fractured basalt zone: Box Canyon site, Idaho. *Water Research Journal*, **36**(12), pp. 3521-3534, LBNL-50323.
- Doughty, C., Benson, S.M. and Pruess, K. 2002. Capacity investigation of brine-bearing sands for geologic sequestration of CO₂. *GHGT-6*. Kyoto, Japan, LBNL-51333.
- Doughty, C. and Faybishenko, B. 2000. Modeling of water flow and tracer breakthrough curves in fractured basalt (lessons learned and future investigations). Falta, B. B. Looney and R. W. *Vadose Zone Science and Technology Solutions*. Battelle Press, LBNL-46158.

- Doughty, Christine and Karasaki, Kenzi. 2002. Flow and transport in hierarchically fractured rock. *Journal of Hydrology*, **263**(1-4), pp. 1-22, LBNL-47030.
- Doughty, Christine and Karasaki, Kenzi. 2002. Modeling flow and transport in saturated fractured rock to evaluate site characterization needs. *Bridge the gap between measurement and modeling in heterogeneous media*. Berkeley, CA. March 25-28, 2002. LBNL-49045.
- Doughty, Christine and Karasaki, Kenzi. 2002. Using borehole temperature profiles to constrain regional groundwater flow. *American Geophysical Union (AGU) Meeting*. San Francisco, CA. December 6-10, 2002. LBNL-51495 Abs.
- Doughty, Christine and Karasaki, Kenzi. 2002. Evaluation of uncertainties due to hydrogeological modeling and groundwater flow analysis: steady flow, transient flow, and thermal studies, *LBNL* LBNL-51894.
- Doughty, C. and Karasaki, K. 2002. Constraining hydrologic models using thermal analysis. *Rock Mechanics Symposium*. Tokyo, Japan. January 23-24, 2003. LBNL-53828.
- Doughty, Christine and Karasaki, Kenzi. 2004. Constraining a Fractured-Rock Groundwater Flow Model with Pressure-Transient Data from an Inadvertent Well Test. *Dynamics of Fluids in Fractured Rock*. Berkeley, CA. February 10-12, 2004. LBNL-54236 Ext. Abs.
- Doughty, Christine, Oldenburg, Curtis M. and Zawislanski, Peter T. 2000. Analysis of vadose zone data from a contaminated site: indirect evidence for preferential flow. *Water Resources Research*, LBNL-45319.
- Doughty, Christine and Pruess, Karsten. 2003. Modeling Supercritical CO₂ Injection in Heterogeneous Porous Media. *TOUGH Symposium 2003*. Berkeley, CA. May 12-14, 2003. pp. 8, LBNL-52527.
- Doughty, C., Pruess, K. and Benson, S.M. 2003. Development of a Well-Testing Program for a CO₂ Sequestration Pilot in a Brine Formation. *Second National Conference on Carbon Sequestration*. Alexandria, VA. May 5-8, 2003. LBNL-53010.
- Doughty, Christine, Pruess, Karsten, Benson, Sally M., Hovorka, Susan D., Knox, Paul R. and Green, Christopher T. 2001. Capacity investigation of brine-bearing sands of the Frio formation for geologic sequestration of CO₂. Washington, D.C. May 14-17, 2001. LBNL-48176.
- Doughty, Christine, Salve, Rohit and Wang, Joseph S.Y. 2002. Liquid-release tests in unsaturated fractured welded tuffs: II. Numerical modeling. *Journal of Hydrology*, **256**(1-2), pp. 80-105, LBNL-47530.
- Doughty, Christine and Tsang, Chin-Fu. 2000. BORE-II-A code to compute dynamic wellbore

- electrical conductivity logs with multiple inflow/outflow points including the effects of horizontal flow across the well LBNL-46833.
- Doughty, C. and Tsang, C-F. 2003. Signatures in Flowing Wellbore Electrical-Conductivity Logs. *Water Resources Research*, LBNL-53011.
- Doughty, Christine and Tsang, Chin-Fu. 2003. Hydrologic Characterization of Fractured Rock Using Flowing Fluid Electric Conductivity Logs. *International Symposium on Fractured Rock*. Berkeley, CA. February 10-12, 2004. LBNL-54158 Ext. Abs.
- Doughty, Christine and Tsang, Chin Fu. 2002. Inflow and outflow signatures in flowing wellbore electrical conductivity logs. *Water Resources Research*, LBNL-51468.
- Dumenil Gates, L and Bauer, H-S. 2002. The tropical easterly jet in reanalyses and a hierarchy of GCMS. *Climate Dynamics*, LBNL-50080.
- Dybowski, C. and Gabuda, S.P., et al. 2001. "Correlation and Relativistic Effects in Beta-PbO and other Lead(II) Oxides: A Quantum Ab Initio Explanation of the 207Pb NMR and XANES Spectra. *Journal of Solution State Chemistry*, **157**, pp. 220, LBNL-48519.
- Dybowski, C., Gabuda, S. P. , Kozlova, S. G. , Neue, G., Perry, D.L. and Terskikh, V.V. 2001. Correlation and Relativistic Effects in Beta-PbO and Other Lead(II) Oxides: A Quantum Ab Initio Explanation of the 207Pb NMR and XANES Spectra. *J. Sol. State Chem.*, **157**, pp. 220, LBNL-48519.
- Eaton, D., Janecky, D., Woodward, D., Imrich, J., Evans, J., Morris, M., Reimus, P. and Hazen, T. 2001. SCFA lead lab technical assistance review of the Pit 7 Complex source containment LBNL-47546.
- Egbert, G. D., Eisel, M., Boyd, O. S. and Morrison, H. F. 2000. DC trains and Pc3s: Source effects in mid-latitude geomagnetic transfer functions. *Geophysical Research Letters*, **27**(1), pp. 25-28, LBNL-44960.
- Elmroth, E., Ding, C. and Wu, Y-S. 2001. High Performance Computations for Large Scale Simulations of Subsurface Multiphase Fluid and Heat Flow Simulation. *Journal of Supercomputing*, **18**(3), pp. 235-258, LBNL-43383.
- Eng, Peter J., Trainor, Thomas P., Brown Jr, Gordon E., Waychunas, Glenn A., Newville, Matthew, Sutton, Stephen R. and Rivers, Mark L. 2000. Structure of the hydrated alpha-Al₂O₃ (0001) surface. *Science*, **288**(5468), pp. 1029-1033, LBNL-46490.
- Engelhardt, Irina, Finsterle, Stefan and Hofstee, Col. 2003. Experimental and numerical investigation of flow phenomena in nonisothermal, variably saturated bentonite/crushed rock mixtures. *Vadose Zone Journal*, **2**, pp. 239-246, LBNL-52838.
- Evans, W. C., Ingebritsen, S. E., Wicks, C. W., Mariner, R. H., Kennedy, B. M. and van Soest,

- M. C. 2002. Intrusion rate in the Three Sisters area of the central Oregon Cascades inferred by idfferent methods. *GSA Western Condilleran Meeting*. Corvallis, OR. May 13-15, 2002. LBNL-50642 Abs.
- Evans, W.C., Mariner, R.H., Ingebritsen, S.E., van Soest, M.C., Kennedy, B.M. and Huebner, M.A. 2002. Report of hydrologic investigations in the Three Sisters area of central Oregon, Summer 2001, *USGS LBNL-50649*.
- Evans, W. C., Sorey, M. L., Cook, A. C., Kennedy, B. M., Shuster, D., Colvard, E. M., White, L. D. and Huebner, M. A. 2002. Tracing and quantifying magmatic carbon discharge in cold groundwaters: Lessons learned from Mammoth Mountain, USA. *Journal of Volcanology and Geothermal Research*, **114**(3-4), pp. 291-312, LBNL-50610.
- Evans, William C., van Soest, Matthijs C., Mariner, Robert H., Ingebritsen, Steven E., Wicks Jr., Charles W. and Schmidt, Mariek E. 2003. Evidence in low-temperature springs for recent basaltic intrusions west of three sisters, central oregon, usa. *Geology*, LBNL-53877.
- Fan, J. K., Nihei, K., Myer, L. and Rector, J. 2000. Overlap domain decomposition technique for modeling wave propagation. *Geophysics*, LBNL-44813.
- Fantle, Matthew S. and DePaolo, Donald J. 2003. Iron isotopic fractionation during continental weathering. *Earth & Planetary Science Letters*, LBNL-54079.
- Faybishenko, Boris. 2000. Tensiometer for shallow and deep measurements of water pressure in vadose zone and groundwater. *Journal of Soil Sciences*, **165**(6), pp. 473-482, LBNL-43333.
- Faybishenko, Boris. 2000. Evidence of chaotic behavior in flow through fractured rocks, and how we might use chaos theory in fratured rock hydrology, LBNL-45047.
- Faybishenko, Boris. 2000. A fuzzy-chaotic analysis of water flow and chemical tranport in unsaturated-saturated soils., LBNL-45050 Abs.
- Faybishenko, Boris. 2000. On nonlinear, chaotic dynamics of flow in unsaturated fractured rocks, LBNL-45055 Abs.
- Faybishenko, Boris. 2002. Chaotic dynamics in flow through unsaturated fractured media. *Advances in Water Resources*, **25**(7), pp. 793-816, LBNL-46958.
- Faybishenko, Boris. 2002. Using nonlinear dynamics for environmental management of the vadose zone and groundwater, LBNL-51778 Abs.
- Faybishenko, Boris. 2003. Nonlinear dynamics in flow through unsaturated fractured-porous media: status and perspectives. *Reviews of Geophysics*, LBNL-51779.
- Faybishenko, Boris. 2003. Introduction to modeling of hydrogeologic systems using fuzzy

- differential equations. Zadeh, Masoud Nikravesh and Lotfi A. *Fuzzy Partial Differential Equations and Relational Equations*. Springer-Verlag, LBNL-52170.
- Faybishenko, Boris, Babchin, Alexander J., Frenkel, Alexander L., Halpern, David and Sivashinsky, Gregory I. 2001. A model of chaotic evolution of an ultrathin liquid film flowing down an inclined plane. *Colloids and Surfaces A-Physicochemical and Engineering Aspects*, **192**(1-3), pp. 377-385, LBNL-42884.
- Faybishenko, B., Bandurraga, M., Conrad, S.M., Cook, P., Eddy-Dilek, C., Everett, L., Hazen, T., Hubbard, S., Hutter, A.R., Jordan, P., Keller, C., Leij, F.J., Loaiciga, N., Majer, E.L., Murdoch, L., Renehan, S., Riha, B., Rossabi, J., Rubin, Y., Simmons, A., Weeks, S. and Williams, C.V. 2000. Vadose Zone Characterization and Monitoring: Current Technologies, Applications, and Future Developments. Looney, B. B. and Falta, R., Eds. *Vadose Zone: Science And Technology Solutions (Vol I and II)*. Batelle Press, OH, pp. 133-396, LBNL-46159.
- Faybishenko, Boris, Bodvarsson, Gudmundur S., Hinds, Jennifer and Witherspoon, Paul A. 2003. Scaling and hierarchy of models for flow processes in unsaturated fractured rock. Yakov A. Pachepsky, David E. Radcliffe and H. Magdi Selim. *Scaling Methods in Soil Physics*. CRC Press LLC, pp. 373-417, LBNL-51543.
- Faybishenko, B., Bodvarsson, G.S. and Salve, R. 2002. The physics of unstable infiltration, seepage, and gravity drainage in partially saturated tuffs. *The Geological Society of American 2002 Annual Meeting*. Denver, CO. October 27-30, 2002. LBNL-51077 Abs.
- Faybishenko, B., Bodvarsson, G.S. and Salve, R. 2003. On the physics of unstable infiltration, seepage, and gravity drainage in partially saturated tuffs. *Journal of Contaminant Hydrology*, **62 and 63**(special Issue SI), pp. 63-87, LBNL-49864.
- Faybishenko, B., Doughty, C., Steiger, M., Long, J. C. S., Wood, T. R., Jacobsen, J. S., Lore, J. and Zawislanski, P. T. 2000. Conceptual Model of the Geometry and Physics of water Flow in a Fractured Basalt Vadose Zone. *Water Resources Research*, **36**(12), pp. 3499-3520, LBNL-42925.
- Faybishenko, B. and Hazen, T. 2001. Fuzzy systems modeling of in situ bioremediation of chlorinated solvents, LBNL-47720 Abs.
- Faybishenko, B., Witherspoon, P.A. and Benson, S. 2001. Dynamics of Fluids in Fractured Rock. *Geophysical Monograph*, **122**, LBNL-48547.
- Faybishenko, Boris, Young, Alvin L., Baryakhtar, Victor G., Taboas, Anibal L. and Habegger, Loren. 2003. Reflections on the Chernobyl Accident and the Future of Nuclear Power. *Environmental Science and Pollution Research*(Special Issue 1), LBNL-54152.
- Feineman, Maureen D. and DePaolo, Donald J. 2003. Steady-state $^{226}\text{Ra}/^{230}\text{Th}$ disequilibrium in mantle minerals: Implications for melt transport rates in island arcs. *Earth & Planetary*

Science Letters, **215**, pp. 339-355, LBNL-54021.

Fields, M. W., Yan, T., Liu, X, Bagwell, C. E., Carroll, S. L., Jardine, P. M., Criddle, C. S., Hazen, T. C. and Zhou, J. 2004. Polyphasic characterization of microbial communities under the stressful conditions of nitrate, heavy metals, radionuclides, and acidic pH in contaminated groundwater. *10th Annual International Symposium on Microbial Ecology ISME-10 Microbial Planet: Sub-Surface to Space*. Cancun, Mexico. August 22-27, 2004. LBNL-54788 Abs.

Finsterle, Stefan. 2000. Using the continuum approach to model unsaturated flow in fractured rock. *Water Resources Research*, **36**(8), pp. 2058-2066, LBNL-45459.

Finsterle, S. 2000. Demonstration of optimization techniques for ground water plume LBNL-46746.

Finsterle, S. 2000. Impact of parameter uncertainty, variability, and conceptual model errors on predictions of flow through fractured porous media. San Francisco, CA. December 15-19, 2000. LBNL-46794 Abs.

Finsterle, S. 2001. Multiphase inverse modeling: possibilities and limitations. *Groundwater Updates, Proceedings of the IAHR International Symposium 2000 on Groundwater*. Sonic City, Omiya, Saitama, Japan. May 8-10, 2001. Springer-Verlag: pp. 479, LBNL-44321 Abs.

Finsterle, S., Ahlers, C.F., Cook, P.J. and Tsang, Y. 2001. Seepage into drifts located in a lithophysal zone LBNL-47947.

Finsterle, S., Ahlers, C. F., Trautz, R. C. and Cook, P. J. 2003. Inverse and predictive modeling of seepage into underground openings. *Journal of Contaminant Hydrology*, **62-63**, pp. 89-109, LBNL-48914.

Finsterle, S., Bjornsson, Grimur, Pruess, K. and Battistelli, Alfredo. 2000. Evaluation of Geothermal Well Behavior Using Inverse Modeling. Faybishenko, B., Witherspoon, P.A. and Benson, S., Eds. *AGU Monograph Dynamics of Fluids in Fractured Rock Concepts and Recent Advances*. Geophysical Monograph 122, Washington D.C., pp. 377-387, LBNL-43331 Bk.

Finsterle, S., Bodvarsson, G.S., Ahlers, C.F., Li, G., Tsang, C-F., Tsang, Y., Sonnenthal, E.L. and Rutqvist, J. 2001. Seepage LBID-2365.

Finsterle, S., Fabryka-Martin, J. T. and Wang, J. S. Y. 2002. Migration of a water pulse through fractured porous media. *Journal of Contaminant Hydrology*, **54**(1-2), pp. 37-57, LBNL-46747.

Finsterle, Stefan and Ghezzehei, Teamrat A. 2003. Effect of Heterogeneity Structure on Estimation Uncertainty for a Calibrated Seepage Model. *American Geophysical*

- Union(AGU) Fall Meeting 2003*. San Francisco, CA. December 8-12, 2003. LBNL-53680 Abs.
- Finsterle, S., Ghezzehei, Teamrat A., Trautz, R.C. and Cook, P. 2003. Seepage Calibration Model and Seepage Testing Data, MDL-NBS-HS-000004 REV02, *BSC*, Las Vegas, pp. 150 LBID-2470.
- Finsterle, S. and Trautz, R.C. 2000. Seepage Calibration Model and Seepage Testing Data, MDL-NBS-HS-000004 REV 00 LBID-2333.
- Fischer, M.L., Billesbach, D.P., Riley, W., Berry, J. and Torn, M.S. 2002. Carbon cycle measurements DOE-ARM southern Great Plains site, LBNL-51303 Abs.
- Fischer, M.L., Billesbach, D.P., Riley, W., Berry, J. and Torn, M.S. 2002. Measured midsummer spatial heterogeneity in ecosystem-atmosphere CO₂/H₂O exchange for selected crop systems of the southern Great Plains, LBNL-51301.
- Fischer, M.L., Billesbach, D.P., Riley, W., Berry, J. and Torn, M.S. 2002. Mid-summer fluxes of carbon, water and energy in agricultural plots near the SGP central facility, LBNL-51298.
- Fischer, M.L., Billesbach, D.P., Riley, W., Berry, J. and Torn, M.S. 2003. Spatial heterogeneity in ecosystem-atmosphere carbon exchange near the ARM Central Facility during Spring 2003, LBNL-52810 Abs.
- Fischer, M.L., Billesbach, D.P., Riley, W., Berry, J. and Torn, M.S. 2003. Spatial heterogeneity and inter-annual variation in ecosystem-atmosphere CO₂/H₂O exchange in the Southern Great Plains, LBNL-52812 Abs.
- Flay, R.B. and Narasimhan, T.N. 2002. Managing groundwater quality and quantity in the San Joaquin Valley, California: Integrated strategies for protecting groundwater in arid regions. College of Natural Resources, University of California at Berkeley *M.S. Thesis, University of California at Berkeley*, LBNL-51655
- Flint, A., Flint, L., Kwicklis, E., Bodvarsson, G.S. and Fabryka-Martin, J. 2002. Estimating recharge at Yucca Mountain, Nevada: A case study. *Hydrology Journal*, **10**(1), pp. 180-204, LBNL-50724.
- Flint, A.L., Flint, L.E., Bodvarsson, G.S., Kwicklis, E.M. and Fabryka-Martin, J.M. 2000. Development of the conceptual model of unsaturated zone hydrology at Yucca Mountain, Nevada, LBNL-46569.
- Flint, A.L., Flint, L.E., Bodvarsson, G.S., Kwicklis, E.M. and Fabryka-Martin, J.M. 2001. The hydrology of Yucca Mountain. *Reviews of Geophysics*, **39**(4), pp. 447-470, LBNL-46568.
- Frangos, W. 2000. High Frequency Impedance Measurements. MSE, Univeristy of California,

Berkeley *Ph.D. Thesis, Univeristy of California, Berkeley*, LBNL-48658

- Frangos, William, Becker, Alex and Lee, K.H. 2002. Electromagnetic impedance measurements in the 0.3-30 MHz range. *Symposium on the Application of Geophysics to Environmental and Engineering Problems*. Las Vegas, NV. February 13, 2002. LBNL-48704 Abs.
- Frangos, William, Becker, Alex and Lee, K. H. 2003. High-Frequency and Very-High-Frequency (HF & VHF) Above-Ground Electromagnetic Impedance Measurements. *Journal of Environmental & Engineering Geophysics*, LBNL-51672.
- Freifeld, B. 2000. *Active hydrogeological testing*, LBNL-45086.
- Freifeld, Barry. 2001. Estimation of fracture porosity in an unsaturated fractured welded tuff using gas tracer testing. Civil and Environmental Engineering, University of California, Berkeley, CA *Ph.D. Thesis, University of California, Berkeley, CA*, LBNL-50123
- Freifeld, Barry, Kneafsey, Tim, Pruess, Jacob, Reiter, Paul and Tomutsa, Liviu. 2002. X-ray Scanner for ODP Leg 204: Drilling Gas Hydrates on Hydrate Ridge, Cascadia Continental Margin LBNL-51327.
- Freifeld, B., Kneafsey, Timothy J., Tomutsa, Liviu, Stern, Laura A. and Kirby, Stephen H. 2002. Use of computed X-ray tomographic data for analyzing the thermodynamics of a dissociating porous sand/hydrate mixture. *4th International Conference on Gas Hydrate*. Yokohama, Japan, LBNL-49859.
- Freifeld, Barry M., Kneafsey, Timothy J., Pruess, Jacob and Tomutsa, Liviu. 2003. Field characterization of hydrate-bearing core using x-ray computed tomography. *2003 Geological Society of America Annual Conference and Hxhibition*. Seattle, WA. Nov 2-5,2003. LBNL-53096 Abs.
- Freifeld, Barry M., Kneafsey, Tim J., Tomutsa, Liviu and Pruess, Jacob. 2003. Development of a Portable X-Ray Computed Tomographic Imaging System for Drill Site Investigation of Recovered Core. *2003 International Symposium of the Society of Core Analysts*. Paris, France, LBNL-52088 Abs.
- Fried, J.S., Torn, M.S. and Mills, E. 2000. The impact of climate change on wildfire severity in northern california, LBNL-46488.
- Fried, Jerenmy S., Torn, Margaret S. and Mills, Evan. 2003. The Impact of Climate Change on Wildfire Severity: A Regional Forecast for Northern California. *Climate Change*, LBNL-53273.
- Fung, I. Y., Meyn, S. K., Tegen, I., Doney, S. C., John, J. and Bishop, J. 2000. Iron supply and demand in the upper ocean. *Global Biogeochemical Cycles*, **14**(1; Correction in 2), pp. 1st publication 281-295; correction 697-700, LBNL-44330.

- Gabuda, S.P., Kozlova, S.G., Terskikh, V.V., Dybowski, C., Neue, G. and Perry, D.L. 2000. ²⁰⁷Pb NMR in minium, Pb₃O₄: Evidence for the [Pb₂]⁴⁺ ion and possible relativistic effects in the Pb-Pb bond, LBNL-46492.
- Garcia, Julio and Pruess, Karsten. 2000. Local grid refinement for multi-scale geothermal reservoir simulation with TOUGH2 LBNL-45646.
- Garcia, Julio E. 2001. Density of aqueous solutions of CO₂ LBNL-49023.
- Garcia, Julio Enrique. 2003. Fluid Dynamics of Carbon Dioxide Disposal into Saline Aquifers. Civil and Environmental Engineering, University of California, Berkeley, pp. 139 *Ph.D. Thesis, University of California, Berkeley*, pp. 139, LBNL-54280
- Garcia, Julio E. and Pruess, Karsten. 2003. Flow instabilities during injection of CO₂ into saline aquifers. *TOUGH Symposium 2003*. Berkeley, CA. May 12-14, 2003. LBNL-52717.
- Garrido, Fernando, Illera, Virginia, Campbell, C. G. and García-González, María Teresa. 2004. Regulating Cd, Cu, and Pb mobility in an acid soil using phosphogypsum, sugar foam, and phosphoric rock amendments. *Journal of Environmental Quality*, LBNL-54566.
- Gasperikova, Erika. 2003. A new-generation EM system for the detection and classification of buried metallic objects. *Society of Exploration Geophysicists International Exposition and Seventy-Third Annual Meeting*. Dallas, TX. October 26-31, 2003. LBNL-53963.
- Gasperikova, Erika, Cuevas, Nestor and Morrison, H. Frank. 2003. Natural Field Induced Polarization for Mapping of Deep Mineral Deposits: A case study from Arizona. *Geophysics*, LBNL-52485.
- Gasperikova, Erika, Hoversten, G. Michael, Ryan, Michael P., Kauahikaua, James P., Newman, Greg A. and Cuevas, Nestor. 2003. Magnetotelluric Investigations of Kilauea Volcano, Hawaii. Part I: Experiment Design and Data Processing. *Journal of Geophysical Research*, LBNL-53341 Part I.
- Gasperikova, Erika and Morrison, H. Frank. 2001. Mapping of induced polarization using natural fields. *Geophysics*, **66**(1), pp. 137-147, LBNL-51152.
- Gaudinski, J.B., T., Dawson, Torn, M.S. and Trumbore, S.E. 2003. Fine root lifetimes in five forests measured with radiocarbon. *Soil Science Society of America 2002 Annual Meeting*. Indianapolis, Indiana. November 10-14, 2002. LBNL-53271 Abs.
- Gaudinski, J.B., Trumbore, S.E., Dawson, T., Torn, M.S., Pregitzer, K. and Joslin, J.D. 2003. Quantifying fine root inputs to soil: Results from combining radiocarbon and traditional methodologies. *American Geophysical Union (AGU) Fall Meeting 2002*. San Francisco, CA. December 6-10, 2002. EOS, **83**(47), LBNL-53272 Abs.
- Geller, Jil. 2000. Lawrence Berkeley National Lab and Geologic Nuclear Waste Disposal

- Underground Testing and Modeling of Flow and Transport PUB-838.
- Geller, J., Peterson Jr., J.E., Williams, K., Ajo-Franklin, J. B. and Majer, E. 2002. First field test of NAPL detection with high resolution borehole seismic imaging. *9th Biennial International Conference on Nuclear and Hazardous Waste Management*. Reno, Nevada. August 4-8, 2002. LBNL-50689 Abs.
- Geller, Jil T., Ajo-Franklin, Jonathan B. and Majer, Ernest L. 2003. Effect of Immiscible Liquid Contaminants on P-Wave Transmission Through Natural Aquifer Samples. *2003 Annual Meeting/SAGEEP*. San Antonio, TX. April 6-10, 2003. LBNL-52131.
- Geller, Jil T., Borglin, Sharon E. and Faybishenko, Boris A. 2001. Experiments and evaluation of chaotic behavior of dripping water in fracture models LBNL-48394.
- Geller, J.T., Holman, H.-Y., Su, G., Conrad, M.E., Pruess, K. and Hunter-Cevera, J.C. 2000. Flow dynamics and potential for biodegradation of organic contaminants in fractured rock vadose zones. *Journal of Contaminant Hydrology*, **43**(1), LBNL/ALS-43110.
- Geller, Jil T., Kowalsky, Michael B., Seifert, Patricia K. and Nihei, Kurt T. 2000. Acoustic detection of Immiscible Liquids in Sand. *Geophysical Research Letters*, **27**(3), pp. 417-420, LBNL-42791.
- Geller, J.T., Majer, E.L., Peterson, J.E., Williams, K.H. and Flexser, S. 2001. Mapping DNAPL transport contamination in sedimentary and fractured rock aquifers with high resolution borehole seismic imaging Project No. SF11SS13 FY01 Annual Report LBNL-49385.
- Ghezzehei, Teamrat A. 2004. Constraints on Flow Regimes in Unsaturated Fractures. *Dynamics of Fluids in Fractured Rock*. Berkeley, CA. February 10-12, 2004. LBNL-54323 Abs.
- Ghezzehei, Teamrat A. 2004. Constraints on Flow Regimes in Wide-Aperture Fractures. *Water Resources Research*, LBNL-54681.
- Ghezzehei, Teamrat A., and Finsterle, Stefan. 2003. Film Flow along Tunnel Walls. *American Geophysical Union(AGU) Fall Meeting 2003*. San Francisco, CA. December 8-12, 2003. LBNL-53681 Abs.
- Ghezzehei, Teamrat A., Trautz, R.C. and Finsterle, S. 2003. Evaluating the Effectiveness of Liquid Diversion Around an Underground Opening when Evaporation is Non-Negligible. *International TOUGH Symposium 2003*. Berkeley, CA. Mat 12-14, 2003. pp. 6, LBNL-52499.
- Ghezzehei, T.A., Trautz, R.C., Finsterle, S., Cook, P.J. and Ahlers, C.F. 2003. Modeling coupled evaporation and seepage in ventilated tunnels. *Vadose Zone Journal*, LBNL-53857.
- Ghezzeheri, T.A. and Or, D. 2000. Dynamics of Soil Aggregate Coalescence Governed by Capillary and Tillage Processes. *Water Resources Research*, **36**(2), pp. 367-379, LBNL-

50343.

- Ghezzeheri, T.A. and Or, D. 2001. Rheological Properties of Wet Soil and Clays under Steady and Oscillatory Stresses. *Soil Science Society of America Journal*, **65**(3), pp. 624-637, LBNL-50344.
- Glassley, William E., Simmons, A. and Kercher, James R. 2002. Small-scale Porosity and mineralogical heterogeneity effects on reactive transport models. *Applied Geochemistry*, **17**, pp. 699-708, LBNL-46487.
- Glassley, William E., Simmons, Ardyth M. and Kercher, James R. 2000. Mineralogical heterogeneity in fractured, porous media and its representation in reactive transport models. *Journal of Applied Geochemistry*, LBNL-45163.
- Goldstein, Steven J., Murrell, Michael T., Simmons, Ardyth M., Oliver, Ronald D., Dobson, Patrick F., Reyes, Ignacio A. and De La Garza, Rodrigo. 2003. Evidence for Radium Mobility at the Nopal I Uranium Deposit, Peña Blanca, Mexico. *Geological Society of America 2003 Annual Meeting*. Seattle, WA. November 2-5, 2003. GSA, **35**(No. 6; Abstract #436; Paper 177-16), LBNL-54495 Abs.
- Goloshubin, Gennady M., Daley, Thomas M. and Korneev, Valeri A. 2001. Seismic low-frequency effects in gas reservoir monitoring VSP data. San Antonio, TX. September 9-14, 2001. LBNL-47606.
- Goloshubin, Gennady M. and Korneev, Valeri A. 2000. Seismic low-frequency effects from fluid-saturated reservoir. *SEG Meeting 2000*. Calgary, Canada. August 6-11, 2000. LBNL-46477.
- Goloshubin, Gennady M., Korneev, Valeri A. and Vingalov, Vjacheslav M. 2002. Seismic low-frequency effects from oil-saturated reservoir zones. *SEG 72nd Annual International Exposition & Annual Meeting*. Salt Lake City, UT. October 6-11, 2002. pp. 1813-1816, LBNL-50638.
- Gorden, M. E., Hudgins, M., Hazen, T. and Bartles, D. P. 2000. Operational Characteristics of an Aerobic Landfill Bioreactor. *Solid Waste Assoc of North Am 2nd Annual Landfill Symp, Sacramento, CA*, LBNL-45088.
- Goth-Goldstein, Regine, Holman, Hoi-Ying and Russell, Marion. 2000. In vitro gastrointestinal mimetic protocol for measuring bioavailable contaminants. *Official Gazette of the United States Patent and Trademark Office Patents*, **3**, pp. 1232, LBNL-43752.
- Gray, Malcolm, Whipple, Chris, Peterson, Per, Newbury, Claudia, Metlay, Dan, Brocoum, Steve, Thompson, Paul, D'Agnesse, Frank, Bodvarsson, Gudmundur, Dixon, David, Wikjord, Alf, Peters, Mark, VanLuik, Abe, Kessler, John, Witherspoon, Paul and Reamer, Bill. 2003. Proceedings, IAEA Network Training. *IAEA Network: General*

- Training on Methodologies for Geological Disposal in North America*. Berkeley, CA; Yucca Mountain, NV; Winnipeg, Manitoba Canada. August 11-22, 2003. LBNL, LBNL-53475.
- Greathouse, Jeffery A., Refson, Keith and Sposito, Garrison. 2000. Molecular dynamics simulation of water mobility in magnesium-smectite hydrates. *Journal of the Chemical Society*, **122**(46), pp. 11459-11464, LBNL-47391.
- Greenberg, Michael R., Hazen, Terry C., Borglin, Sharon E. and Oldenburg, Curt M. 2001. Factors controlling concentrations of metals in the leachate from aerobic and anaerobic laboratory landfill bioreactors. *AGU Fall Meeting 2001*. San Francisco, CA. December 10-14, 2001. LBNL-48928 Abs.
- Gregory, Ingrid R., Bowman, John P., Jimenez, Luis, Zhang, Dai, Fleming, James M., Sayler, Gary S., Pfiffner, Susan M., Brockman, Fred J., Chauhan, Sadhana and Hazen, Terry C. 2001. Use of gene probes to access the impact and effectiveness of aerobic in situ bioremediation of TCE and PCE. *Applied and Environmental Microbiology*, LBNL-47638.
- Gritto, Roland. 2003. Subsurface void detection using seismic tomographic imaging. *Geophysical Technologies for Detecting Underground Coal Mine voids*. Lexington, KY. July 28-30, 2003. LBNL-53227.
- Gritto, Roland, Daley, Tom M. and Majer, Ernest L. 2000. Seismic mapping of the subsurface structure at the Ryepatch Geothermal Reservoir LBNL-47032.
- Gritto, Roland, Daley, Tom M. and Majer, Ernest L. 2000. Seismic mapping of the subsurface structure at the Rye Patch Geothermal Reservoir, Nevada. *American Geophysical Union*. San Francisco, CA. December 15-19, 2000. **81**(48), LBNL-46834 Abs.
- Gritto, Roland, Daley, Tom M. and Majer, Ernie L. 2001. Time lapse borehole seismic monitoring of CO₂ injection in an oil reservoir. *American Geophysical Union Annual Meeting*. San Francisco, CA. December 10-14, 2001. EOS, **82**(47): pp. 860, LBNL-49014 Abs.
- Gritto, Roland, Daley, Thomas M. and Majer, Ernest L. 2001. A model of the subsurface structure at the Ryepatch Geothermal Reservoir based on surface-to-borehole seismic data. *Geothermal Resources Council 2001 Annual Meeting*. San Diego, CA. August 26-29, 2001. **25**: pp. 1-9, LBNL-47812.
- Gritto, Roland, Daley, Thomas M. and Majer, Ernest L. 2002. Integrated seismic studies at the Rye Patch Geothermal Reservoir, Nevada. *GRC Annual Meeting*. Reno, NV. September 22-25, 2002. Geothermal Resources Council, **25**: pp. 431-435, LBNL-50590.
- Gritto, Roland, Daley, Thomas M. and Majer, Ernest L. 2003. Estimating subsurface topography

- from surface-to-borehole seismic studies at the Rye Patch Geothermal Reservoir. *Geothermics*, **32**(3), pp. 275-295, LBNL-50490.
- Gritto, Roland, Daley, Thomas M. and Myer, Larry R. 2002. Joint cross well and single well seismic studies at Lost Hills, California. *Geophysical Prospecting*, LBNL-50651.
- Gritto, Roland, Daley, Thomas M. and Myer, Larry R. 2002. Seismic borehole monitoring of CO-2 injection in an oil reservoir. *American Geophysical Union 2002 Fall Meeting*. San Francisco. December 6-10, 2002. EOS, **83**, LBNL-51569 Abs.
- Gritto, Roland, Daley, Thomas M. and Myer, Larry R. 2003. Imaging of CO2 Injection During an Enhanced-Oil-Recovery Experiment. *Underground Injection Science and Technology Symposium*. Berkeley, CA. October 22-25, 2003. pp. 1-12, LBNL-52626.
- Gritto, Roland, Kneafsey, Timothy and Tomutsa, Liviu. 2003. Core evaluation of hydrologic and seismic properties of methane-bearing coals. *2003 Symposium of The Society of Core Analysts*. Pau, France. September 21-24, 2003. LBNL-52078 Abs.
- Gritto, Roland, Korneev, Valeri A., Daley, Thomas M., Feighner, Mark A., Majer, Ernest L. and Peterson, John E. 2004. Surface-to-tunnel seismic tomography studies at Yucca Mountain, Nevada. *Journal of Geophysical Research*, **109**(B3), pp. B03310, LBNL-50470.
- Gritto, Roland and Majer, Ernest. 2003. Numerical Seismic Studies of Fault Detection in Geothermal Reservoirs. *American Geophysical Union(AGU) Fall Meeting 2003*. San Francisco, CA. December 8-13, 2003. LBNL-53745 Abs.
- Gritto, Roland and Majer, Ernest L. 2003. Seismic Methods for Resource Exploration in Enhanced Geothermal Systems. *Geothermal Resources Council Annual Meeting*. Morelia, Mexico. October 12-15, 2003. *Geothermal Resources Council Transactions*, **27**: pp. 223-226, LBNL-52967.
- Gritto, Roland and Majer, Ernest L. 2004. Seismic Detection of Fault and Fracture Systems. *Dynamics of Fluids in Fractured Rock; 2nd International Symposium*. Berkeley, CA. February 10-12, 2004. LBNL: pp. A6-A12, LBNL-54623 Ext. Abs.
- Gritto, Roland, Majer, E.L. and Daley, T.M. 2000. Development and application of 3-D seismic imaging methods for geothermal environments. *Geothermal Resources Council Annual Meeting 2000*. San Francisco, CA. September 24-27, 2000. pp. 1-8, LBNL-46032.
- Gritto, Roland, Romero, Arturo E. and Daley, Thomas M.; 2003. Results of a VSP Experiment at the Resurgent Dome, Long Valley Caldera, California. *Geophysical Research Letters*, LBNL-52488.
- Grote, K., Hubbard, S., Harvey, J. and Rubin, Y. 2003. Evaluation of Infiltration in Layered Pavements using Surface GPR Reflection Techniques. *Journal of Applied Geophysics*,

LBNL-54150.

- Grote, K., Hubbard, S., Lawrence, A., Riemer, M., Peterson, J. and Rubin, Y. 2000. Non-destructive monitoring of water content using surface ground penetrating radar techniques, LBNL-46473.
- Grote, K., Hubbard, S. and Rubin, Y. 2002. GPR Monitoring of Volumetric Water Content in Soils Applied to Highway Construction and Maintenance. *The Leading Edge of Exploration*, **21**(5), pp. 482-485, LBNL-49383.
- Grote, K., Hubbard, S. and Rubin, Y. 2003. Field-scale estimation of volumetric water content using GPR groundwave techniques. *Water Resources Research*, **39**(11), pp. 1321; 1310.1029/2003WR002045, LBNL-50347.
- Grote, K., Hubbard, S. and Rubin, Y. 2003. Influence of near-surface vegetation on the values and variability of soil water content. *American Geophysical Union Annual Fall Meeting 2003*. San Francisco, CA. December 6-10, 2003. EOS Trans AGU, **84**(46): pp. Abstract #H32c-0591, LBNL-53644 Abs.
- Grote, K.R., Hubbard, S., Rubin, Y., Harvey, J. and Lawrence, A. 2000. Nondestructive monitoring of sub-asphalt water content using surface ground penetrating radar techniques. St. Louis, MI. December 2000. LBNL-48460 Abs.
- Grote, K.R., Hubbard, S.S., Harvey, J. and Rubin, Y. 2001. Nondestructive monitoring of sub-asphalt water content using surface ground penetrating radar techniques. Denver, CO. March 4-7, 2001. LBNL-44976 Abs.
- Grote, Katherine R., Hubbard, Susan S. and Rubin, Yoram. 2001. Soil water content spatial correlation estimation using GPR. *AGU Fall 2001*. San Francisco, CA. December 10-14, 2001. EOS. Trans. AGU, **82**(47), LBNL-50535 Abs.
- Guay, C. K. and Bishop, J. K. B. 2002. A rapid birefringence method for measuring suspended CaCO₃ concentrations in seawater. *Deep-Sea Research Part 1, Oceanographic Research Papers*, **49**(1), pp. 197-210, LBNL-46895.
- Guay, Christopher K.H. and Bishop, James K. 2002. Long-term autonomous measurements of biomass variability in the vicinity of the ice edge in the southern ocean. *AGU Fall Meeting 2002*. San Francisco, CA. December 6-10, 2002. LBNL-51438 Abs.
- Guay, Christopher K.H., Falkner, Kelly Kenison, Muench, Robin D., Mensch, Manfred, Frank, Markus and Bayer, Reinhold. 2001. Wind-driven transport pathways for Eurasian Arctic river discharge. *Journal of Geophysical Research: C-Oceans*, **106**(C6), pp. 11,469-411,480, LBNL-45451.
- Halliday, Alex N., Christensen, John N., Lee, Der-Chuen, Hall, Chris M., Luo, Xiaozhong and Rehkamper, Mark. 2000. Multiple-collector inductively coupled plasma mass

- spectrometry. Barshick, Christopher M., Duckworth, Douglas C. and Smith, David H., Eds. *Inorganic Mass Spectrometry*. Marcel Dekker, Inc., pp. 291-328, LBNL-46480.
- Haukwa, C. 2000. Mountain-Scale Coupled Processes (TH) Models, MDL-NBS-HS-000007 REV00 LBID-2334.
- Haukwa, C., Tsang, Y. and Bodvarsson, G. 2000. Seepage and drainage of condensate water in the potential geological depository of nuclear waste at Yucca Mountain, Nevada. *Topical Sessions at the Fall Geological Society of America Annual Meeting & Exposition*. Reno, NV, LBNL-46732 Abs.
- Haukwa, C.B., Tsang, Y.W. and Bodvarsson, G.S. 2002. Liquid seepage at repository horizon under thermal loading, LBNL-51354.
- Haukwa, C.B., Tsang, Y.W., Wu, Y-S. and Bodvarsson, G. 2003. Effect of repository thermal load on liquid seepage. *Journal of Contaminant Hydrology*, **62-63**, LBNL-49940.
- Haukwa, C. B., Tsang, Y. W., Wu, Y. -S. and Bodvarsson, G. S. 2003. Effect of heterogeneity in fracture permeability on the potential for liquid seepage into a heated emplacement drift of the potential repository. *Journal of Contaminant Hydrology*, **62-63 (Special Issue SI)**, pp. 509-527, LBNL-51355.
- Haukwa, C. B., Wu, Y. S. and Bodvarsson, G. S. 2003. Modeling thermal-hydrological response of the unsaturated zone at Yucca Mountain, Nevada, to thermal load at a potential repository. *Journal of Contaminant Hydrology*, **62-63(Special Issue SI)**, pp. 529-552, LBNL-49950.
- Haukwa, C.B., Wu, Yu-Shu and Bodvarsson, G.S. 2002. Thermal loading at a potential repository: Modeling the thermal-hydrological response within the unsaturated zone at Yucca Mountain, Nevada. *The Geological Society of America 2002 Denver Annual Meeting*. Denver, CO USA. October 27-30, 2002. LBNL-51080 Abs.
- Hazen, Terry. 2000. Bioremediation of petroleum hydrocarbo-contaminated soils, comprehensive report, LBNL-45558.
- Hazen, T. 2001. SCFA lead lab technical assistance review of SLAC ground water plumes. *SCFA Technical Assistance Request #82* LBNL-47831.
- Hazen, T. 2002. SCFA lead lab technical assistance at Lawrence Berkeley National Laboratory: Baseline review of three groundwater plumes. *SCFA Technical Assistance Request #114*, LBNL LBNL-51386.
- Hazen, T. 2002. Technical assistance to Ohio closure sites: Technologies to address elachate from the on-site disposal facility at Fernald Environmental Management Project, Ohio. *SCFA Technical Assistance Request #113*, Fernald, OH LBNL-51387.

- Hazen, T. 2002. SCFA lead lab technical assistance at Oak Ridge Y-12 national security complex: Evaluation of treatment and characterization alternatives of mixed waste soil and debris at disposal area remedial action (DARA) solids storage facility (SSF). *SCFA Technical Assistance Request #136*, Oak Ridge, TN LBNL-51389.
- Hazen, T. 2002. Technical assistance to Ohio closure sites: Recommendations to address contaminated soils, concrete, and corrective action management unit/groundwater contamination at Ashtabula, Ohio. *Technical Assistance #141* LBNL-51388.
- Hazen, Terry C. 2000. Bioremediation Education Science and Technology (BEST) Program Annual Report 1999 PUB-839.
- Hazen, T.C. 2000. Bioremediation overview, LBNL-45096.
- Hazen, T.C. 2000. Bioremediation using SRS patented technologies, LBNL-45093.
- Hazen, T.C. 2000. Bioremediation: state-of-the-science, LBNL-45095.
- Hazen, T. C. 2000. Bioremediation of contaminated subsurface environments, LBNL-45100.
- Hazen, T.C. 2000. U.S. landfills: changing the subtitle D paradigm, "dry tombs" to bioreactors, LBNL-45098.
- Hazen, T.C. 2000. How do I know if in situ bioremediation is feasible?, LBNL-45092.
- Hazen, T.C. 2000. Innovative bioremediation demonstrations of petroleum contaminated sites in Poland and US, LBNL-45099.
- Hazen, T.C. 2000. Critical biogeochemical parameters used for in situ bioremediation of solvents in fractured rock, LBNL-45097.
- Hazen, T.C. 2000. Biosparging for rapid in situ cleanup of solvent contaminated soil and groundwater at the SRS D-area oil seepage basin, LBNL-45101.
- Hazen, Terry C. 2001. In situ respiration and direct enzymatic assays for assessing bioremediation. *American Geophysical Union (AGU) Fall Meeting 2001*. San Francisco. December 10-14, 2001. LBNL-48885 Abs.
- Hazen, Terry C. 2001. Aerated landfills, changing the "dry tomb" paradigm. *First International Conference on Environmental Recovery of Yugoslavia*. Belgrade, Yugoslavia. September 27-30, 2001. LBNL-48931 Abs.
- Hazen, Terry C. 2001. In situ bioremediation: From research to practical applications. *23rd Biennial Groundwater Conference*. Sacramento, CA. October 30-31, 2001. LBNL-48938 Abs.

- Hazen, Terry C. 2001. Bioremediation: the hope and the hype. *First International Conference on Environmental Recovery of Yugoslavia*. Belgrade, Yugoslavia. September 27-30, 2001. LBNL-48937 Abs.
- Hazen, Terry C. 2002. In situ bioremediation: From research to practical applications. *2002 Subsurface Science Symposium*. Boise, ID. October 13-16, 2002. LBNL-51594 Abs.
- Hazen, T.C., Borglin, S.E., Oldenburg, C.M. and Zawislanski, P.T. 2002. Aerobic landfill bioremediation. *The Sixth International Symposium*. Orlando, FL. May 19-22, 2003. LBNL-51759 Abs.
- Hazen, Terry C., Joyner, Dominique, Borglin, Sharon, Faybishenko, Boris, Conrad, Mark, Rios-Valezques, Carlos, Malave, Josue, Martinez, Ramon E., Andersen, Gary L., Firestone, Mary, Brodie, Eoin, Long, Philip E., Willet, Anna and Koenigsberg, Stephen. 2004. Functional Microbial Changes During Lactate and HRC-Stimulated Bioreduction of Cr(VI) in Hanford 100H Sediments. *10th Annual International Symposium on Microbial Ecology ISME-10 Microbial Planet: Sub-Surface to Space*. Cancun, Mexico. August 22-27, 2004. LBNL-54808 Abs.
- Hazen, Terry C., Joyner, Dominique, Borglin, Sharon, Faybishenko, Boris, Conrad, Mark, Rios-Valezquez, Carlos, Malave, Josue, Martinez, Ramon E., Andersen, Gary L., Firestone, Mary, Brodie, Eoin, Long, Philip E., Willet, Anna and Koenigsberg, Stephen. 2003. Functional Microbial Changes During Lactate and HRC-Stimulated Bioreduction of Cr(VI) in Hanford 100H Sediments. *American Society for Microbiology 104th Meeting*. New Orleans, LA. May 19-23, 2004. LBNL-54237 Abs.
- Hazen, T. C., Tien, A., Worsztynowicz, A., Altman, D. J., Ulfing, K. and Manko, T. 2003. Biopiles for remediation of petroleum-contaminated soils: A Polish case study. *Proceedings of the NATO Advanced Research Workshop on The Utilization of Bioremediation to Reduce soil Contamination: Problems and Solutions*. Prague, Czech Republic. June 14-19, 2000. Kluwer Academic Publishers, **19**: pp. 229-246, LBNL-46445.
- Hazen, T. C. , Tien, A. J. , Worsztynowicz, A., Altman, D. J. , Ulfing, K., Manko, T. and Kuperberg, M. 2000. Bioremediation of a Polish Petroleum Refinery, *Florida State University* LBNL-50345.
- Hazen, T.C., Tien, A.J., Worsztynowicz, A., Altman, D.J., Ulfing, K., Plaza, G. and Manko, T. 2001. Poland petroleum refinery sludge lagoon cleanup using a biopile. *First International Conference on Environmental Recovery of Yugoslavia*. Belgrade, Yugoslavia. September 27-30, 2001. Abstracts of the General Meeting of the American Society for Microbiology, **100**: pp. 555-556, LBNL-48936 Abs.
- He, Qiang, He, Zhili, Wu, Liyou, Wall, Judy D., Hazen, Terry, Fields, Matthew W. and Zhou, Jizhong. 2004. Global Transcriptional Analysis of *Desulfovibrio Vulgaris* in Response to Nitrite Stress Using Whole-Genome Oligonucleotide Microarrays. *American Society for*

- Microbiology 104th Meeting*. New Orleans, LA. May 19-23, 2004. LBNL-54285 Abs.
- He, Zhili, He, Qiang, Wu, Liyou, Wall, Judy D., Hazen, Terry, Fields, Matthew W. and Zhou, Jizhong. 2004. Transcriptional Analysis of Responses of *Desulfovibrio vulgaris* to NaCl Stress Using Whole-Genome Oligonucleotide Microarrays. *American Society for Microbiology 104th Meeting*. New Orleans, LA. May 19-23, 2004. LBNL-54284 Abs.
- Hendricks, M.B. and DePaolo, D. J. 2000. Space and time variations of delta O-18 and delta D in precipitation: Can paleotemperature be estimated from ice cores? *Global Biogeochemical Cycles*, **14**(3), pp. 851-861, LBNL-52365.
- Hepple, Robert P. and Benson, Sally M. 2002. Implications of surface seepage on the effectiveness of geologic storage of carbon dioxide as a climate change mitigation strategy. *GHGT-6*. Kyoto, Japan. October 1-4, 2002. LBNL-51267.
- Herbel, Mitchell, Borglin, Sharon, Switzer Blum, Jodi and Oremland, Ronald. 2002. Microbial reduction of elemental selenium to selenide in anoxic sediments -- A XANES study. *American Geophysical Union*. San Francisco, CA. December 6-10, 2002. LBNL-52056.
- Herbel, Mitchell J., Switzer Blum, Jodi, Oremland, Ronald S. and Borglin, Sharon E. 2003. Reduction of elemental selenium to selenide: Experiments with anoxic sediments and bacteria that respire se-oxyanions. *Geomicrobiology Journal*, **20**(6), pp. 587-602; DOI: 510.1080/01490450390249505, LBNL-53371.
- Herman, G. C., Milligan, P. A., Dong, Q. C. and Rector, J. W. 2000. Analysis and removal of multiply scattered tube waves. *Geophysics*, **65**(3), pp. 745-754, LBNL-44978.
- Herman, G. C., Milligan, P. A., Huggins, R. J. and Rector, J. W. 2000. Imaging shallow objects and heterogeneities with scattered guided waves. *Geophysics*, **65**(1), pp. 247-252, LBNL-44977.
- Hickman, R.G., Dobson, P.F., van Gerven, M., Sagala, B. and Gunderson, R.P. 2002. Tectonic and stratigraphic evolution of the Sarulla graben geothermal area, North Sumatra, Indonesia. *Journal of Asian Earth Sciences*, LBNL-51196.
- Hinds, Jennifer. 2001. Fracture variability and hydrologic implications at Yucca Mountain, Nevada. *GSA Annual Meeting*. Boston, MA, LBNL-48656 Abs.
- Hinds, Jennifer, Bodvarsson, Gudmundur S. and Nieder-Westermann, Gerald. 2003. Conceptual evaluation of the potential role of fractures in unsaturated processes at Yucca Mountain. *Journal of Contaminant Hydrology*, **62 and 63**(Special Issue SI), pp. 111-132, LBNL-48950.
- Hinds, J. and Pan, L. 2000. Development of Numerical Grids for UZ Flow and Transport Modeling, ANL-NBS-HS-000015 REV00 LBID-2322.

- Hinds, Jennifer J. and Bodvarsson, Gudmundur. 2001. Role of fractures in processes affecting potential repository performance. *2001 International High-Level Radioactive Waste Management Conference*. Las Vegas, NV. April 29 - May 3, 2001. LBNL-47039.
- Hinds, Jennifer J. and Bodvarsson, Gudmundur S. 2001. Fractures and UZ processes at Yucca Mountain LBNL-47991.
- Holben, William E., DeFlaun, Mary F., Dong, Hailiang, Fuller, Mark E., Green, Maria, Hubbard, Susan S., Kovacik, William P., Mailloux, Brian J., Majer, Ernie L., Murray, Christopher J., Onstott, Tullis C., Scheibe, Timothy D., Streger, Sheryl H., Swift, Donald J.P. and Xie, Yulong. 2002. Bacterial transport: Integrating aqueous and solid phase qPCR measurement of bacterial numbers with physicochemical parameters by multivariate analysis. *2002 International Symposium on Subsurface Microbiology*. Copenhagen, Denmark. September 8 - 13, 2002. LBNL-50228 Abs.
- Holman, H. Y., Bjornstad, K., McNamara, M.P., Martin, M. C., McKinney, W. R. and Blakely, E. A. 2002. Synchrotron Infrared Spectromicroscopy as a Novel Bioanalytical Microprobe for Individual Living Cells: Cytotoxicity Considerations. *Journal of Biomedical Optics*, **7**(3), pp. 417-424, LBNL-50240.
- Holman, H. Y., Goth-Goldstein, R., Aston, David, Yun, M. and Kengsoontra, J. 2002. Evaluation of gastrointestinal solubilization of petroleum hydrocarbon residues in soil using in vitro physiologically-based Model. *Environmental Science & Technology*, **36**(6), pp. 1281-1286, LBNL-48401.
- Holman, H. Y., Nieman, N., Sorensen, D.L., Miller, C.D., Martin, M.C., Borch, T., McKinney, W. R. and Sims, R.C. 2002. Catalysis of PAH Biodegradation by Humic Acid Shown on Synchrotron Infrared Studies. *Environmental Science and Technology*, **36**(6), pp. 1276-1280, LBNL-50239.
- Holman, H. Y. N., Goth-Goldstein, R., Blakely, E. A., Martin, M. C. and McKinney, W. R. 2000. Synchrotron FTIR spectromicroscopy for assessment of stress responses of individual living human cells to low doses of environmental agents. *Abstracts of Papers American Chemical Society*, **219**(1-2), pp. ANYL 105., LBNL-44013 Abs.
- Holman, Hoi-Ying N., Bjornstad, Kathleen A., McNamara, Morgan P, Martin, Michael C., McKinney, Wayne R. and Blakely, Eleanor A. 2001. Synchrotron infrared beam induces no detectable cytotoxic effects in living cells, LBNL-48400.
- Holman, H.-Y. N., Goth-Goldstein, R., Blakely, E.A., Bjornstad, K., Martin, M.C. and McKinney, W.R. 2000. Individual Human Cell Responses to Low Doses of Chemicals Studied by Synchrotron Infrared Spectromicroscopy. *Biomedical Spectroscopy: Vibrational Spectroscopy and Other Novel Techniques SPIE*, LBNL-45722.
- Holman, Hoi-Ying N., Goth-Goldstein, Regine, Martin, Michael C., Russell, Marion L. and McKinney, Wayne R. 2000. Low-dose responses to 2,3,7,8-tetrachlorodibenzo-p-dioxin

- in single living human cells measured by synchrotron infrared spectromicroscopy. *Environmental Science & Technology*, **34**(12), pp. 2513-2517., LBNL-43783.
- Holman, Hoi-Ying N., Lin, Zhang, Hazen, Terry C. and Joyner, Dominique. 2004. A real-time investigation of *Desulfovibrio vulgaris* response to oxygen stress. *American Society for Microbiology 104th Meeting*. New Orleans, LA. May 19-23, 2004. LBNL-54289 Abs.
- Holman, Hoi-Ying N., Lin, Zhang, Hazen, Terry C. and Joyner, Dominique. 2004. A real-time investigation of *Desulfovibrio vulgaris* response to oxygen stress. *10th Annual International Symposium on Microbial Ecology ISME-10 Microbial Planet: Sub-Surface to Space*. Cancun, Mexico. August 22-27, 2004. LBNL-54807 Abs.
- Holman, Hoi-Ying N., Martin, Michael C, Blakely, Eleanor A., Bjornstad, Kathy and McKinney, Wayne R. 2000. IR spectroscopic characteristics of cell cycle and cell death probed by synchrotron-based FTIR spectromicroscopy by synchrotron radiation based fourier transform IR spectromicroscopy. *Biopolymers*, **57**(6), pp. 329-335, LBNL-45698.
- Holman, Hoi-Ying N., Martin, Michael C. and McKinney, Wayne R. 2002. Tracking chemical changes in a live cell: Biomedical applications of SR-FTIR spectromicroscopy. *First International Conference on Biomedical Spectroscopy. From Molecules to Men*. Cardiff, Wales. July 7-10 , 2002. LBNL-51337.
- Holman, Hoi-Ying N., Martin, Michael C. and McKinney, Wayne R. 2002. Synchrotron-based FTIR spectromicroscopy: Cytotoxicity and heating considerations. *Journal of Biological Physics*, **29**(2/3), LBNL-51900.
- Holman, H.-Y. N., Perry, D. L. , Martin, M. C. and McKinney, W. R. 2000. Applications of synchrotron infrared microspectroscopy to the study of inorganic-organic interactions at the bacterial-mineral interface. *Application of Synchrotron Radiation Techniques to Materials Sciences, MRS Symp. Series*, **54**, LBNL-43874.
- Hou, Zhangshuan, Hubbard, Susan and Rubin, Yoram. 2003. Bayesian Forward and Inverse Modeling of the Vadose Zone Hydrogeology. *Water Resources Research*, LBNL-54325.
- Hou, Zhangshuan, Rubin, Yoram and Hubbard, Susan. 2002. Numerical simulation of soil water content using constraints provided by geophysical measurements. *American Geophysical Union (AGU) Fall Meeting*. San Francisco, CA. December 6-10, 2002. AGU, **83**(47), LBNL-51444 Abs.
- Hou, Zhangshuan, Rubin, Yoram and Hubbard, Susan. 2003. Non-Linear, Bayesian Inversion in the Vadose Zone. *American Geophysical Union(AGU) Fall Meeting 2003*. San Francisco, CA. December 8-13, 2003. EOS Trans. AGU, **84**(46): pp. Abstract #H31b-0464, LBNL-53741 Abs.
- Houseworth, J., Moridis, G. and Bodvarsson, G. 2001. The Effects of the Drift Shadow on Radioactive Transport. *High Level Radioactive Waste Management, Ninth Annual*

International Conference. Las Vegas, NV, LBNL-51030.

Houseworth, J., Moridis, G. and Bodvarsson, G.S. 2003. The effects of the drift shadow on radionuclide transport. *Journal of Contam. Hydrology*, **62-63**, pp. 133-156, LBNL-47467.

Houseworth, J. E. 2000. Features, Events and Processes in Unsaturated Zone Flow and Transport, ANL-NBS-MD-000001 REV00 LBID-2346.

Houseworth, J.E., Finsterle, S. and Bodvarsson, G.S. 2002. Dual-continuum modeling of flow and transport in the drift shadow. *The Geological Society of America 2002 Denver Annual Meeting*. Denver, CO USA, LBNL-51083 Abs.

Houseworth, J. E., Finsterle, S. and Bodvarsson, G. S. 2003. Flow and transport in the drift shadow in a dual-continuum model. *Journal of Contaminant Hydrology*, **62-63**(Special Issue SI), pp. 133-156, LBNL-49868.

Houseworth, J.E., Liu, H.H., Pan, L., Wu, Y-S and Bodvarsson, G.S. 2001. Unsaturated zone transport LBID-2372.

Hoversten, G. Michael, Constable, Steven C. and Morrison, H.Frank. 2000. Marine magnetotellurics for base-of-salt mapping: Gulf of Mexico field-test at the Gemini structure. *Geophysics*, **65**(5), pp. 1476-1488, LBNL-44329.

Hoversten, G. Michael and Gasperikova, Erika. 2003. Investigation Of Novel Geophysical Techniques For Monitoring Co2 Movement During Sequestration, *LBNL*, Berkeley, CA, pp. 94 LBNL-54110.

Hoversten, G. Michael, Gasperikova, Erika, Newman, Greg A., Kauahikaua, James P., Ryan, Michael P. and Cuevas, Nestor. 2003. Magnetotelluric Investigations of Kilauea Volcano, Hawai'I. Part II. Numerical Modeling and Data. *Journal of Geophysical Research*, LBNL-53341 Part II.

Hoversten, G. Michael, Gritto, R., Daley, T., Majer, E.L. and Myer, L. 2002. Crosswell seismic and electromagnetic monitoring of CO2 sequestration. *GHGT-6*. Kyoto, Japan. October 1-4, 2002. pp. 371-376, LBNL-51281 Ext. Abs.

Hoversten, G. Michael, Gritto, R., Washbourne, John and Daley, T. 2002. CO2 gas/oil ratio prediction in a multi-component reservoir by combined seismic and electromagnetic imaging. *Geophysics*, LBNL-51408.

Hoversten, G. M., Gritto, Roland, Washbourne, John and Daley, Tom. 2002. Pressure and Fluid Saturation Prediction in a Multicomponent Reservoir, using Combined Seismic and Electromagnetic Imaging. *Society of Exploration Geophysicists 72nd Annual International Exposition and Annual Meeting*. Salt Lake City, UT. October 6-11, 2002. LBNL-53912.

- Hoversten, G. M., Gritto, Roland, Washbourne, John and Daley, Tom. 2002. Pressure and Fluid Saturation Prediction in a Multicomponent Reservoir, using Combined Seismic and Electromagnetic Imaging. *Geophysics*, LBNL-53912 Jnl.
- Hoversten, G. Michael, Gritto, Roland, Washbourne, John and Daley, Tom. 2002. Fluid saturation and pressure prediction in a multi-component reservoir by combined seismic and electromagnetic imaging. *SEG International Exposition and 72nd Annual Meeting*. Salt Lake City, Utah. October 6-11, 2002. Society of Exploration Geophysicists Transactions: pp. 1770-1773, LBNL-53951 Ext. Abs.
- Hoversten, G.M., Milligan, P., Byun, J., Washbourne, J., Knauer, L.C. and Harness, P. 2003. Crosswell electromagnetic and seismic imaging: An examination of coincident surveys at a steam flood project. *Geophysics*, LBNL-48703.
- Hovorka, Susan D., Doughty, Christine, Benson, Sally M., Pruess, Karsten and Knox, Paul R. 2002. Assessment of the impact of geological heterogeneity on CO₂ storage in brine formations: A case study from the Texas gulf coast, LBNL-51390.
- Hu, Max Q., Kneafsey, Timothy J., Trautz, Robert C. and Wang, Joseph S.Y. 2002. Tracer penetration into welded tuff matrix from the flowing fracture. *Vadose Zone Journal*, **1**(1), pp. 102-112, LBNL-46400.
- Hu, Max Q., Salve, Rohit, Stringfellow, William T. and Wang, Joseph S.Y. 2001. Field tracer transport tests in unsaturated fractured tuff. *Journal of Contaminant Hydrology*, **51**(1-2), pp. 1-12, LBNL-47004.
- Hu, Qinhong, Kneafsey, Timothy and Wang, Joe. 2001. Summary report on Phase 1 feasibility study of in-drift diffusion LBNL-49063.
- Hu, Qinhong, Kneafsey, Timothy J., Roberts, Jeffery J., Tomutsa, Liviu and Wang, Joseph. 2003. Characterizing unsaturated diffusion in porous tuff gravel. *Vadose Zone Journal*, LBNL-51504.
- Hu, Qinhong, Kneafsey, Timothy J., Wang, Joseph S.Y., Roberts, Jeff and Carlson, Steven. 2002. Characterizing unsaturated diffusion in porous granular tuff. *American Geophysical Union 2002 Fall Meeting*. San Francisco CA. December 6-10, 2002. LBNL-51504 Abs.
- Hu, Q., Trautz, R.C. and Wang, J. S. Y. 2001. Tracer migration delineation in the unsaturated fractured tuff. *Hydrological Processes*, LBNL-45278.
- Hu, Qinhong and Wang, Joe. 2001. Chemical analysis of water samples collected during cross drift bulkhead entries LBNL-49178.
- Hu, Qinhong and Wang, Joseph S.Y. 2001. Direct and high-resolution measurements of retardation and transport in whole rock samples under unsaturated conditions. San

- Francisco, LBNL-49239 Abs.
- Hu, Qinhong and Wang, Joseph S.Y. 2001. Diffusion in unsaturated geological media: A review. *Critical Reviews in Environmental Science & Technology*, LBNL-47640.
- Hubbard, A. 2000. Estimation of petrophysical and measurement support scale relationships using multi-scaled field data. *AGU EOS*, **80**(46): pp. F303, LBNL-44980 Abs.
- Hubbard, Susan. 2004. Advances and Challenges in Hydrogeophysics. *2004 Joint Assembly*. Montreal, Canada. May 17-21, 2004. LBNL-54701 Abs.
- Hubbard, Susan, Chen, J., Peterson, J., Majer, E., Williams, K.H., Swift, D.J.P., Maillonx, B. and Rubin, Y. 2001. Hydrogeological characterization of the South Oyster bacterial transport site using geophysical data. *Water Resources Research*, **37**(10), pp. 2431-2456, LBNL-46224.
- Hubbard, Susan, Chen, Jinsong and Williams, Kenneth H. 2003. Characterization of Subsurface Properties and Processes using Geophysical Data. *Waste Management '04: Innovative Field Monitoring for Environmental Restoration*. Tuscon, AZ. February 29-March 4, 2004. LBNL-53596 Abs.
- Hubbard, S., Grote, K., Kowalsky, Michael B. and Rubin, Y. 2002. High-resolution estimation of near-surface water content using surface GPR, IAHS. *Bridging the Gap between Measurement and Modeling in Heterogenous Media*. LBNL. March 25-28, 2002. International Groundwater Symposium, IAHS, AGU, ASCE/EWRI, LBNL-48809.
- Hubbard, S., Grote, K., Lunt, I., Pierce, L. and Rubin, G. M. 2003. Spatial and temporal variability of soil moisture content obtained using CPR data: Accuracy, resolution, and implications for precision viticulture. *GSA Annual Meeting*. Seattle, WA. November 2-4, 2003. LBNL-53370 Abs.
- Hubbard, S., Grote, K., Lunt, I. and Rubin, Y. 2003. Near Surface Water Content Estimation Using GPR Data: Investigations Within California Vineyard. *EGS-AGU-EUG Joint Invited Assembly 2003*. Nice, France. April 6-11, 2003. European Geophysical Society(5, 02403), LBNL-52106 Abs.
- Hubbard, S., Grote, K. and Rubin, Y. 2002. Mapping the volumetric soil water content of a California vineyard using high-frequency GPR ground wave data. *The Leading Edge*, **21**(6), pp. 552-559, LBNL-50487.
- Hubbard, S., Pierce, L., Grote, K. and Rubin, Y. 2003. Assessing the Relative Importance of Incorporating Spatial and Temporal Variability of Soil and Plant Parameters into Local Water Balance Models: Investigations Within a California Vineyard. *American Geophysical Union Fall Annual Meeting*. San Francisco, CA. December 6-10, 2003. EOS Trans. AGU, **84**(46): pp. Abstract #H42m-01, LBNL-53600 Abs.

- Hubbard, S. and Rubin, Y. 2000. Hydrogeological parameter estimation using geophysical data: A review of selected estimation techniques using geophysical data. *Journal of Contaminant Hydrology*, **45**(1-2), LBNL-46470.
- Hubbard, Susan and Rubin, Yoram. 2002. Hydrogeophysics: State-of-the discipline EOS, **83**: pp. 602 and 606, LBNL-51326 Abs.
- Hubbard, S. and Rubin, Y. 2002. A review of selected estimation techniques and using geophysical data, LBNL-50346.
- Hubbard, Susan and Williams, Ken. 2004. Geophysical Monitoring of Gas Production During Biostimulation. *Waste Management 2004*. Tuscon, AZ. March 1-5, 2004. LBNL-54324.
- Hubbard, S., Williams, K., Mailoux, B. and Majer, E. 2002. Monitoring microbially-induced physical property changes using high-resolution geophysical methods. *American Geophysical Union Spring Meeting 2002*. Washington, DC. May 28-31, 2002. AGU, **83**(19): pp. Abstract #21A-02-2002, LBNL-50565 Abs.
- Hubbard, S., Zhang, P., Monteiro, P., Peterson, J. and Rubin, Y. 2003. Experimental Detection of Reinforcing Bar Corrosion Using Nondestructive Geophysical Techniques. *American Concrete International*, pp. 501-510, LBNL-48454.
- Hubbard, Susan S., Chen, Jinsong, Mailloux, Brian, Majer, Ernie and Rubin, Yoram. 2000. Heterogeneity and bacterial transport at the Oyster, Va site. *EOS*, **81**, LBNL-48455 Abs.
- Hubbard, Susan S., Grote, Katherine, Kowalsky, Michael B. and Rubin, Yoram. 2001. Investigating temporal and spatial variations in near surface water content using GPR. San Francisco, CA, LBNL-48808 Abs.
- Hubbard, Susan S., Grote, Katherine, Kowalsky, Michael B. and Rubin, Yoram. 2001. Estimation of near surface hydrogeological properties using surface GPR. Berkeley, CA, LBNL-48443 Abs.
- Hubbard, Susan S. and Rubin, Yoram. 2000. Hydrogeological parameter estimation using geophysical data: A review of selected techniques. *Journal of Contaminant Hydrology*, **45**(1-2), pp. 3-34, LBNL-44744.
- Hubbard, Susan S., Williams, Kenneth H., Chen, Jinsong, Rubin, Yoram and Majer, Ernest L. 2001. Characterization and monitoring of the Oyster, VA bacterial transport site using geophysical data. *GSA Annual Meeting*. Boston, MA. November 1-10, 2001. LBNL-48652 Abs.
- Hubbard, Susan S., Zhang, Jieying, Monteiro, Paulo J. M., Peterson, John E. and Rubin, Yoram. 2000. Noninvasive detection of rebar corrosion using ground penetrating radar methods. *ACI Materials Journal*, LBNL-48447.

- Hudson, J.A., Stephansson, O., Andersson, J., Tsang, C-F. and Jing, L. 2001. Coupled T-H-M issues relating to radioactive waste repository design and performance. *International Journal of Rock Mechanics and Mining Sciences*, **38**(1), pp. 143-161, LBNL-48687.
- Huisman, J. A., Hubbard, S. S., Redman, D. and Annan, P. A. 2003. Soil Water Content Measurements With Ground Penetrating Radar: A Review. *AGU-EOS-EUG Joint Assembly 2003*. Nice, France. April 6-10, 2003. European Geophysical Society, **5**: pp. 02403, LBNL-52104 Abs.
- Huisman, J. A., Hubbard, S. S., Redman, J. D. and Annan, A. P. 2003. Measuring soil water content with ground-penetrating radar: A review. *Vadose Zone Journal*, **2**, pp. 476-491, LBNL-52357.
- Iliassov, Pavel A., Datta-Gupta, Akhil and Vasco, D. W. 2001. Field-scale Characterization of permeability and saturation distribution using partitioning tracer tests: The Ranger Field, Texas. *SPE Annual Technology Conference & Exhibit*. New Orleans, LA. September 30 - October 3, 2001. Society of Petroleum Engineers, **SPE 71320**: pp. 1-16, LBNL-52355.
- Ito, Kazumasa and Karasaki, Kenzi. 2003. Hydrogeological characterization of sedimentary rocks with numerical inversion using steady-state hydraulic head data. *2003 AGU Fall Meeting*. San Francisco. December 8-12, 2003. LBNL-53722 Abs.
- Ito, Kazumasa and Seol, Yongkoo. 2003. A 3-Dimensional Discrete Fracture Network Generator to Examine Fracture-Matrix Interaction using TOUGH2. *TOUGH Symposium 2003*. Berkeley, CA. May 12-14, 2003. pp. 8, LBNL-52465.
- Javandel, Iraj and Freifeld, Barry. 2002. Application of thermally enhanced vapor extraction at lawrence berkeley national laboratory. *The 14th Technical Information Exchange Workshop*. Oakland, CA, LBNL-51756 Abs.
- Jellinek, A. Mark and DePaolo, Donald J. 2003. A model for the origin of large silicic magma chambers: precursors of caldera-forming eruptions. *Bulletin of Volcanology*, **65**(5), pp. 363-381, LBNL-54020.
- Jin, Guodong, Patzek, Tad W. and Silin, Dimitry B. 2003. Physics-based reconstruction of sedimentary rocks. *SPE Western Regional / AAPG Pacific Section Joint Meeting*. Long Beach, CA. May 19-24, 2003. LBNL-52966.
- Johnson, Lane R. and Nadeau, Robert M. 2003. Asperity Model of an Earthquake - Dynamic Problem. *Bulletin of the Seismological Society of America*, LBNL-52630.
- Johnson, Lane R. and Sammis, Charles G. 2001. Effects of rock damage on seismic waves generated by explosions. *Pure and Applied Geophysics*, **158**(11), pp. 1869-1908, LBNL-48368.

- Johnson, Thomas M., Bullen, Thomas D. and Zawislanski, Peter T. 2000. Selenium stable isotopes ratios as indicators of sources and cycling of selenium: results from the northern reach of San Francisco Bay. *Environmental Science and Technology*, **34**(11), pp. 2075-2079, LBNL-46494.
- Johnson, T. M., Roback, R. C., McLing, T. L., Bullen, T.D., DePaolo, D. J., Doughty, C., Hunt, R. J., Smith, R. W., Cecil, L. D. and Murrell, M. T. 2000. Groundwater "Fast-Paths" in the Snake River plain aquifer: Radiogenic isotope ratios as natural groundwater tracers. *Geology*, **28**(10), pp. 871-874, LBNL-51632.
- Johnson, W.P., Zhang, P., Fuller, M.E., Scheibe, T.D., Mailloux, B.J., Onstott, T.C., DeFlaun, M.F., Hubbard, S.S., Radtke, J., Kovacik, W.P. and Holben, W. 2000. Ferrographic tracking of bacterial transport in the field at the narrow channel focus area, Oyster, Va. *Environmental Science Technology*, **35**(1), pp. 182-191, LBNL-46472.
- Joyner, D., Borglin, S. E., Huang, R., Hazen, T. C., Wall, J. D., Yen, H-C and Stolyar, S. M. 2004. Chemically defined medium for *Desulfovibrio vulgaris* stress studies and biomass production. *American Society for Microbiology 104th Meeting*. New Orleans, LA. May 19-23, 2004. LBNL-54288 Abs.
- Juanes, Ruben and Patzek, Tadeusz. 2002. Strictly hyperbolic models of co-current three-phase flow with gravity. *Transport in Porous Media*, LBNL-51845.
- Juanes, Ruben and Patzek, Tadeusz. 2004. Analytical solution to the Riemann problem of three-phase flow in porous media. *Transport in Porous Media*, **55**(1), pp. 47-70, LBNL-51558.
- Juanes, Ruben and Patzek, Tadeusz W. 2003. Stabilized numerical solutions of three-phase porous media flow using a multiscale finite element formulation. *Computer Methods in Applied Mechanics and Engineering*, LBNL-51603.
- Juanes, R. and Patzek, T. W. 2003. Multi-scale stabilized finite elements for the simulation of tracer injections and waterflood. *Society of Petroleum Engineers Journal*, LBNL-50383.
- Juanes, R. and Patzek, T. W. 2003. Three-phase displacement theory. *Society of Petroleum Engineers Journal*, LBNL-50845.
- Juanes, Ruben and Patzek, Tadeusz W. 2004. Relative permeabilities for strictly hyperbolic models of three-phase flow in porous media. *Transport in Porous Media*, LBNL-51442.
- Juncosa Rivera, Ricardo, Xu, Tianfu and Pruess, Karsten. 2001. A comparison of results obtained with two subsurface non-isothermal multiphase reactive transport simulators, FADES-CORE and TOUGHREACT LBNL-47315.
- Jung, H., Pae, G., Kim, J., Cho, J. and Choi, H. 2001. Mechanisms and kinetic modeling of ozone degradation in unsaturated soils contaminated with Penanthrene. *First International Conference on Oxidation and Reduction for in-situ treatment of soil and*

- groundwater*. Niagara Falls, Ont, LBNL-50288.
- Kahle, M., Kleber, M., Torn, M. and Jahn, R. 2003. Carbon storage in coarse and fine clay fractions of illitic soils. *Soil Science Society of America Journal*, LBNL-53792.
- Kalabegishvili, T.L., Tsibakhashvili, N.Y. and Holman, H.-Y.N. 2003. Electron spin resonance (ESR) study of chromium(V) formation and decomposition by basalt-inhabiting bacteria. *Environmental Science & Technology*, LBNL-53383.
- Karasaki, Kenzi. 2002. Rethinking geothermal energy as a renewable energy source (2). *Geothermal Energy*, **27**(3), pp. No. 99, LBNL-51375.
- Karasaki, Kenzi. 2002. Rethinking geothermal energy as a renewable energy source (1). *Geothermal Energy*, **27**(2), pp. 98, LBNL-51374.
- Karasaki, K., Freifeld, B., Cohen, A., Grossenbacher, K., Cook, P. and Vasco, D. 2001. A multidisciplinary fractured rock characterization study at Raymond field site, Raymond, CA. *Journal of Hydrology*, **236**(1-2), pp. 17-34, LBNL-44577.
- Karasaki, K., Freifeld, B., Cohen, A., Grossenbacher, K., Cook, P. and Vasco, D.W. 2000. A multidisciplinary fractured rock characterization study at Raymond field site, Raymond, CA. *Journal of Hydrology*, **236**(1-2), LBNL-46461.
- Kauffman, M.E., Holman, H.-Y.N., Martin, M.C., Bauer, W.F. and Lehman, R.M. 2003. Biogeochemistry of bacterial attachment to minerals using synchrotron radiation fourier transformation infrared spectromicroscopy. *Geochimica*, LBNL-53380.
- Keers, Henk, Johnson, Lane R. and Vasco, Don W. 2000. Acoustic crosswell imaging using asymptotic waveforms. *Geophysics*, **65**(5), pp. 1569-1582, LBNL-44478.
- Keers, H., Vasco, D. and Johnson, L. 2003. Poroelastic waveform inversion of crosswell data. *Geophysics*, LBNL-51179.
- Keers, H., Vasco, D.W. and Johnson, L.R. 2001. Viscoacoustic cross-well imaging using asymptotic waveforms. *Geophysics*, **66**(3), pp. 861-870, LBNL-46463.
- Keller, Roger, Francis, Nick, Houseworth, Jim and Kramer, Norman. 2001. Impact of drill and blast excavation on respository performance confirmation. Las Vegas, NV, LBNL-46877.
- Kennedy, B. Mack, Fischer, T.P. and Shuster, D.L. 2000. Heat and helium in geothermal systems. *Proceedings, 25th Workshop on Geothermal Reservoir Engineering*. Stanford, CA. Jan. 21-26, 2000. Stanford Geothermal Program Report, **SGP-TR-165**: pp. 167-173, LBNL-45308.
- Kennedy, B.M. and Shuster, D.L. 2000. Noble gases: sensitive natural tracers for detection and monitoring injectate returns to geothermal reservoirs. San Francisco CA. September 24-

- 27, 2000. **24**: pp. 247-252, LBNL-46194.
- Kennedy, B.M., Torgersen, T. and van Soest, M. C. 2002. Multiple atmospheric noble gas components in hydrocarbon reservoirs: A study of the northwest shelf, Delaware Basin, SE New Mexico. *Geochimica Cosmochimica Acta*, **66**(16), pp. 2807-2822, LBNL-47387.
- Kim, Hee Joon and Lee, Ki Ha. 2004. Electromagnetic Fields in a Non-Uniform Steel-Cased Borehole. *EAGE 66th Conference & Exhibition*. Paris, France. June 7-10, 2004. LBNL-54162 Ext. Abs.
- Kim, Hee Joon, Lee, K. H. and Wilt, Mike. 2003. Efficient imaging of crosshole electromagnetic data. *The 6th SEGJ International Symposium - Imaging Technology*. Tokyo, Japan. January 22-24, 2003. , Proceedings of the 6th SEGJ International Symposium. - Imaging Technology: pp. 322-327, LBNL-51439.
- Kim, Hee Joon, Lee, Ki Ha and Wilt, Michael. 2002. An Efficient Inversion Algorithm for Interpreting Single-Hole Electromagnetic Data. *Earth Planets Space*, **51**, pp. 255-259, LBNL-51896.
- Kim, Hee Joon, Lee, Ki Ha and Wilt, Michael. 2003. A Fast Inversion Method for Interpreting Borehole Electromagnetic Data. *Earth Planets Space*, LBNL-52292.
- Kim, Hee Joon, Lee, Ki Ha and Wilt, Mike. 2003. Efficient crosshole electromagnetic imaging for detecting injected CO₂ migration. *SEG International Exposition and Seventy-Third Annual Meeting*. Dallas, TX. October 26-31,2003. LBNL-52453 Abs.
- Kim, Hee Joon, Song, Yoonho, Lee, Ki Ha and Wilt, Michael J. 2003. Efficient crosswell EM tomography using localized nonlinear approximation. *Joint Exploration Geophysics, Multi-Tamsa, and Butsri-Tansa*, LBNL-53451.
- Kim, Jinwon. 2001. A nested modeling study of elevation-dependent climate change signals in California induced by increased atmospheric CO₂. *Geophysical Research Letters*, **28**(15), pp. 2951-2954, LBNL-48081.
- Kim, J. and Corapcioglu, M.Y. 2001. Sharp-interface modeling of LNAPL sources migrating on the water table. *Environmental Engineering Science*, **18**(6), pp. 359-367, LBNL-50294.
- Kim, Jinwon, Kim, Tae-Kook, Arritt, Raymond W. and Miller, Norman L. 2002. Impacts of increased CO₂ on the hydroclimate of the Western United States. *Journal of Climate*, **15**(14), pp. 1926-1942, LBNL-47986.
- Kim, Jinwon, Miller, Norman, L., Kim, Tae-Kook, Aritt, Raymond W, Gutowski Jr., William J., Pan, Zaitao and Takle, Eugene S. 2001. Regional climate change for the western U.S. using the coupled MAS-SPS model nested within the HadCM2 scenario. *81st American Meteorological Society Annual Meeting*. Albuquerque, New Mexico. January 14-19, 2001. LBNL-46953 Abs.

- Kim, Jinwon, Miller, Norman L., Farrara, John D. and Hong, Song-You. 2000. A Seasonal Precipitation and Stream Flow Hindcast and Prediction Study in the Western United States during the 1997/1998 Winter Season Using a Dynamic Downscaling System. *Journal of Hydrometeorology*, **1**(4), pp. 311-329, LBNL-44063.
- Kim, Jinwon, Miller, Norman L., Farrara, John D. and Hong, Song-You. 2000. A seasonal precipitation and stream flow hindcast and prediction study in the Western United States during the 1997/98 Winter Season using a dynamic downscaling system. *Journal of Hydrometeorology*, **1**(4), pp. 311-329, LBNL-45466.
- Kim, Jeongkong, Schwartz, Franklin W., Shi, Jianyou and Xu, T. 2003. Modeling the Coupling Between Flow and Transport Developed by Chemical Reactions and Density Differences Using TOUGHREACT. *TOUGH Symposium 2003*. Berkeley, CA. May 12-14, 2003. pp. 10, LBNL-52424.
- Kim, J. and Sultan, M. 2000. In Situ Ozonation for Vadose Zone Remediation: Transport Characteristics and Modeling. *Boston, MA*, LBNL-50293.
- Kim, J., Sultan, M. and Criss, R. 2000. Hydrologic Impacts of the Tushka Canal: Inferences from Groundwater Modeling and Stable Isotopic Compositions of Surface and Groundwater samples. *AGU Fall Meeting*. San Francisco, CA, LBNL-50298.
- Kim, J. and Walters, R.W. 2001. Oxygen transfer at low drop weirs. *Journal of Environmental Engineering*, **127**(7), pp. 604-610, LBNL-50295.
- Kim, J. and Walters, R.W. 2001. The importance of tailwater depth in predicting and maximizing oxygen transfer and low-drop weirs. *Journal of Environmental Engineering*, **127**(7), pp. 604-610, LBNL-50297.
- Kim, J.G. and Kim, J. 2001. Parallel Implementation of Finite Element Groundwater Flow Model. *AGU Spring Meeting*. Boston, MA, LBNL-50299.
- Kim, Yongbum, Oh, Keun-Chan and Buchanan, Bob B. 2000. Phytoremediation using barley grain with overexpressed thioredoxin h. San Diego, CA, LBNL-46920 Abs.
- Kiryukhin, Alexey. 2002. Numerical modeling as a tool in understanding TH (thermo-hydrodynamic) processes in geothermal systems (Kamchatka and Kurile islands examples). *International Groundwater Symposium*. Berkeley, CA, LBNL-51240.
- Kiryukhin, Alexey, Xu, Tianfu, Pruess, K. and Slovisov, Igor. 2002. Modeling of thermo-hydrodynamic-chemical processes: Some applications to active hydrothermal systems. *Twenty-seventh workshop on geothermal reservoir engineering*. Stanford, CA, LBNL-51293.

- Kneafsey, Timothy J., Apps, John A. and Sonnenthal, Eric L. 2001. Tuff dissolution and precipitation in a boiling, unsaturated fracture. *2001 International High-Level Radioactive Waste Management Conference*. Las Vegas, NV. 4/29-5/3/2001. LBNL-46149.
- Kneafsey, Timothy J., Dobson, Patrick F., Sonnenthal, Eric L., Spycher, Nicholas and Apps, John A. 2002. Numerical and experimental simulation of dissolution and precipitation: Implications for fracture sealing at Yucca Mountain, Nevada. *The Geological Society of America 2002 Denver Annual Meeting*. Denver, CO USA. October 27 - 30, 2002. **34**(6): pp. 309-310, LBNL-51085 Abs.
- Kneafsey, Timothy J., Gritto, Roland and Tomutsa, Liviu. 2002. Hydraulic and seismic properties of methane-bearing coal. *American Geophysical Union 2002 Fall Meeting*. San Francisco, CA. December 6-10, 2002. EOS, **83**, LBNL-51673 Abs.
- Kneafsey, Timothy J. and Hunt, James R. 2000. Non-aqueous phase liquid spreading during soil vapor extraction. *Journal of Contaminant Hydrology*, LBNL-46519.
- Kneafsey, Timothy J., Oldenburg, Curtis M. and Salve, Rohit. 2001. The effect of clay swelling on fracture flow in the paintbrush nonwelded unit of the Topopah spring tuff LBNL-48125.
- Kneafsey, Timothy J., O'Sullivan, Michael J., Pruess, Karsten and Bodvarsson, Gudmundur S. 2001. Experience in geothermal reservoir simulation to gain confidence in thermohydrologic predictions for nuclear waste disposal, LBNL-48124.
- Kneafsey, Timothy J., Sonnenthal, Eric L. and Apps, John A. 2000. Tuff dissolution and precipitation - Fracture sealing in an experimental heat pipe. *2000 Fall Meeting of the American Geophysical Union*. San Francisco, CA. December 15-19, 2000. LBNL-47028 Abs.
- Korneev, Valeri. 2003. Tube Wave Effects in Cross-Well Seismic Data. *Geophysics*, LBNL-53006.
- Korneev, V., Karageorgy, E. and McEvelly, T. V. 2000. Modeling of observed wave propagation changes in the San Andreas fault-zone at Parkfield, LBNL-46465.
- Korneev, Valeri A., Daley, Thomas M., Silin, Dmitry B. and Goloshubin, Gennady M. 2003. Seismic low-frequency effects in fluid-saturated reservoirs. *Scale Frequency workshop*. Tulsa, OK. June 19-20, 2003. LBNL-53045 Abs.
- Korneev, Valeri A., Goloshubin, Gennady M., Daley, Thomas M. and Silin, Dmitriy B. 2001. Seismic low-frequency effects in monitoring of fluid-saturated reservoirs. *Geophysics*, LBNL-48525.

- Korneev, Valeri A. and Gritto, Roland. 2001. Seismic imaging of subsurface porosity. *American Geophysical Union 2001 Annual Meeting*. San Francisco, CA. December 10-14, 2001. pp. 1813-1816, LBNL-49016 Abs.
- Korneev, V. A. and Johnson, L. R. 2000. 2001. Fluctuations of elastic waves due to random scattering from inclusions. *Journal of Computational Acoustics*, **9**(3), pp. 973-991, LBNL-48534.
- Korneev, V. A., McEvelly, T. V. and Karageorgi, E. D. 2000. Seismological studies at Parkfield VIII: Modeling the observed travel-time changes. *Bulletin of the Seismological Society of America*, **90**(3), pp. 702-708, LBNL-53579.
- Korneev, V.A. and Myer, L. R. 2001. Testing of sedimentary-layer continuity using guided waves, *Gas Research Institute*, pp. 1-149 LBNL-48925.
- Korneev, V.A., Nadeau, R. M. and McEvelly, T. V. 2003. Seismological Studies at Parkfield IX: Fault-Zone Imaging Using Guided Wave Attenuation. *Bulletin of the Seismology Society of America*, **93**(4), pp. 1415-1426, LBNL-48524.
- Kowalsky, Michael B., Rubin, Yoram and Dietrich, Peter. 2003. The use of ground-penetrating radar in sediments undergoing transient variably saturated flow, LBNL-53790.
- Kulkarni, K. N., Datta Gupta, A. and Vasco, D. 2001. A streamline approach for integrating transient pressure data into high resolution reservoir models. *Proceedings of the SPE European Petroleum conference*. Paris, France. October 24-25, 2000. **SPE 65120**: pp. 1-11, LBNL-51176.
- Kyriakidis, Phaedon C., Kim, Jinwon and Miller, Norman L. 2001. Geostatistical mapping of precipitation using atmospheric and terrain characteristics. *Journal of Applied Meteorology*, **40**(11), pp. 1855-1877, LBNL-47117.
- Kyriakidis, P.C., Kim, J. and Miller, N.L. 2000. Generation of synthetic daily prediction records for hydroclimate impact assessments: A geostatistical perspective, LBNL-46484.
- Kyriakidis, Phaedon C., Miller, Norman L. and Kim, Jinwon. 2001. Uncertainty propagation of regional climate model precipitation forecasts to hydrologic impact assessment. *Journal of Hydrometeorology*, **2**(2), pp. 140-160, LBNL-45852.
- Kyriakidis, Phaedon C., Miller, Norman L. and Kim, Jinwon. 2001. A spatial time series framework for modeling daily precipitation at regional scales. *Journal of Hydrology*, LBNL-49156.
- Lai, C.H., Bodvarsson, G.S. and Witherspoon, P.A. 2001. Second-order upwind differencing method for nonisothermal chemical transport in porous media, LBNL-49101.

- Lam, P.J., Bishop, J.K., Waychunas, G.A., Sutton, S.R. and Newville, M. 2002. Characterization of Fe in marine particulates via micro-XAS: Possibilities and limitations. *LBNL Report* LBNL-50849.
- Lapenis, A.G. and Torn, M. S. 2000. Scientists unearth clues to soil contamination by comparing old and new soil samples. *EOS*, **81**(7), pp. 55-57, LBNL-44909.
- Laverov, N.P., Velichkin, V.I., Pek, A.A. and Akunov, V.D. 2000. The geological disposal of high-level nuclear waste: conceptual approach and related problems LBNL-45282.
- Lee, Eung-Seok, Seol, Yongkoo, Fang, Y. C. and Schwartz, Franklin W. 2003. Destruction efficiencies and dynamics of reaction fronts associated with the permanganate oxidation of chloroethylene. *Environmental Science and Technology*, **37**(11), pp. 2540-2546; DOI: 2510.1021/es0261731, LBNL-52163.
- Lee, K.H. 2001. Geophysics with applications to subsurface waste disposal: Case history. Seoul, Korea. September 7, 2001. LBNL-48776.
- Lee, K. H. 2003. 3-D full waveform inversion of seismic data; Part I. Theory. *SEG 2003*. Dallas, TX. October 24-31, 2003. LBNL-52665.
- Lee, K H. and Kim, Hee Joon. 2003. Source-independent full waveform inversion of seismic data. *Geophysics*, **68**(6), pp. 2010-2015, LBNL-49934.
- Lee, Ki Ha, Kim, Hee Joon and Uchida, Toshihiro. 2001. Electromagnetic fields in steel-cased borehole. *Geophysical Prospecting*, LBNL-47641.
- Lee, Ki Ha, Kim, Hee Joon and Uchida, Toshihiyo. 2001. Electromagnetic fields in cased borehole. *Fifth SEGJ International Symposium--Imaging Technology*. Tokyo, Japan, LBNL-47005 Ext. Abs.
- Lee, K H., Kim, H.J. and Wilt, M. 2002. Efficient imaging of single-hole electromagnetic data. *Geothermal Energy - The Baseload Renewable Resource*, **26**, pp. 399-404, LBNL-50010.
- Lee, T. J., Suh, J. H., Kim, Hee Joon, Song, Y. and Lee, Ki Ha. 2002. Electromagnetic travelttime tomography using an approximate wavefield transform. *Geophysics*, **67**(1), pp. 68-76, LBNL-48526.
- Letain, Tracy, Gillaspie, Carrie, Douglas, Matt, Clark, Sue B., Hazen, Terry C. and Nitsche, Heino. 2002. Defining the interactions between microbial cell surfaces and uranium(vi) in oxic conditions. *ISSM 2002, International Symposium on Subsurface Microbiology*. Copenhagen - Society of Danish Engineers. September 8, 2002 to September 13, 2002. LBNL-51660 Abs.
- Letain, Tracy, Silva, Robert J., Nitsche, Heino, Hazen, Terry C., Clark, Sue B., Douglas, Matt, Gillaspie, Carrie, Knopp, Roger and Panak, Petra. 2001. The role of biogeochemical

- dynamics in the alteration of uranium solid phases under oxic conditions. *AGU Fall Meeting 2001*. San Francisco, CA. December 10-14, 2001. LBNL-48915 Abs.
- Letain, Tracy E., Silva, Robert J., Knopp, Roger, Hazen, Terry C., Stringfellow, William T. and Nitsche, Heino. 2002. Defining the interactions between microbial cell surfaces and uranium (VI) in aerobic conditions. *American Society for Microbiology*. Salt Lake City, UT. May 19-23, 2002. LBNL-49207 Abs.
- Lewicki, J.L., Hilley, G. E. and Conner, C. 2003. The scaling relationship between self-potential and fluid flow on Masaya volcano, Nicaragua. *Eleventh International Symposium on Water-Rock Interaction*. Saratoga Springs, NY. June 27-July 2, 2004. LBNL-54042.
- Lewicki, Jennifer L. and Oldenburg, Curtis M. 2003. Integrated Near-Surface Monitoring and Analysis for CO₂ Storage Verification. *American Chemical Society National Meeting*. Anaheim, CA. March 28-April 1, 2004. LBNL-54076.
- Li, Guomin. 2002. Tracer mixing at fracture intersections. *Environmental Geology*, **42**(2-3), pp. 137-144, LBNL-48531.
- Li, Gouping and Majer, E.L. 2002. High-resolution crosswell seismic imaging between horizontal wells. *CSEG Recorder*, **27**, pp. 18-22, LBNL-51692.
- Li, Guoping and Majer, Ernest L. 2003. Coiled tubing deployment makes crosswell seismic surveying successful in horizontal wells. *The Leading Edge*, **22**(5), pp. 454-458, LBNL-53005.
- Li, Guomin and Tsang, Chin-Fu. 2003. Seepage into drifts with mechanical degradation. *Journal of Contaminant Hydrology*, **62**(3)(Special Issue SI), pp. 157-172, LBNL-49869.
- Li, Guomin and Tsang, Chin-Fu. 2002. Effect of rock mechanical degradation on seepage into drifts. *The Geological Society of America 2002 Denver Annual Meeting*. Denver, CO USA. October 27-30, 2002. LBNL-51078 Abs.
- Li, L., Yolcubal, I., Snyder, S., Hu, Q. and Brusseau, M. 2002. Biodegradation during contaminant transport in porous media - Apparent condition-dependency of growth-related coefficients. *Journal of Contaminant Hydrology*, **50**(3-4), pp. 209-223, LBNL-50300.
- Lippmann, M. 2002. Geothermal and the electricity market in Central America. *Geothermal Resources Council Transactions*. Reno, NV. September 22-25, 2002. **26**: pp. 37-42, LBNL-50931.
- Lippmann, Marcelo. 2003. Electrical Systems and Geothermal Development in the Central American Isthmus. *Geothermal Resources Council Trans*, v. **26**, pp. 37-42, LBNL-51844.

- Lippmann, Marcelo and Benson, Sally. 2002. Relevance of underground natural gas storage to geologic sequestration of carbon dioxide. *Sixth International Conference on Greenhouse Gas Control Technologies (GHGT-6)*. Kyoto, Japan. October 1-4, 2003, SGEXP9. LBNL-51294.
- Lippmann, Marcelo, Truesdell, A. H., Rodriguez, M. H. and Perez, A. 2002. Response of Cerro Prieto II and III to Exploitation. *Geothermal*, LBNL-51748.
- Lippmann, M.J., Truesdell, A.H. and Pruess, K. 2000. The control of fault H on the hydrology of the Cerro Prieto III area. *25th Workshop on Geothermal Reservoir Engineering*. Stanford, CA. January 24-26, 2000. LBNL-45258.
- Liu, Hui-Hai. 2002. A constitutive-relationship model for film flow on rough fracture surfaces. *Water Resources Research*, LBNL-51201.
- Liu, H.H. 2000. Conceptual and Numerical Models for UZ Flow and Transport, MDL-NBS-HS-000005 REV 00. LBID-2324.
- Liu, H.H., Ahlers, C.F. and Cushey, M.A. 2000. Analysis of Hydrologic Properties Data, ANL-NBS-HS-000002 REV 00 LBID-2339.
- Liu, H.H. and Bodvarsson, G.S. 2000. Use of the continuum approach for modeling unsaturated flow and transport in fractured rocks: Recent progress. *American Geophysical Union Meeting*. San Francisco, CA, LBNL-48005 Abs.
- Liu, H.H. and Bodvarsson, G.S. 2003. Upscaling of constitutive relations in unsaturated heterogeneous porous media with large air entry values. *Journal of Hydrology*, **276**, pp. 198-209, LBNL-47237.
- Liu, H.H. and Bodvarsson, G.S. 2001. Constitutive relations for unsaturated flow in a fracture network: A numerical investigation. *Journal of Hydrology*, **252**(1-4), pp. 116-125, LBNL-46393.
- Liu, H.H. and Bodvarsson, G.S. 2003. Upscaling of constitutive relations in unsaturated heterogeneous porous media with large air entry values. *Journal of Hydrology*, LBNL-47237.
- Liu, Hui H., Bodvarsson, Gudmundur S. and Finsterle, Stefan. 2002. A note on unsaturated flow in two-dimensional fracture networks. *Water Resources Research*, **38**(9), pp. 1176; 1110.1029/2001WR000977, LBNL-48970.
- Liu, H.H., Bodvarsson, G.S. and Finsterle, S. 2002. Unsaturated flow in two-dimensional fracture networks. *The Geological Society of America 2002 Denver Annual Meeting*. Denver, CO USA, LBNL-51081 Abs.

- Liu, H.H., Bodvarsson, G.S. and Hudson, D. 2002. Large-scale constitutive relationships for unsaturated flow in fractured rocks, LBNL-50449.
- Liu, H.H., Bodvarsson, G.S., Lu, S. and Molz, F.J. 2003. A corrected and generalized successive random additions algorithm for simulating fractional levy motions. *Mathematical Geology*, LBNL-50448.
- Liu, H.H., Bodvarsson, G.S. and Pan, L. 2003. Reply to Comment on "Determination of particle transfer in random walk particle methods for fractured porous media, Liu, Bodvarsson, Pan". *Water Resources Research*, **38**(11), pp. DOI 10.1029/2002WR001568, LBNL-49008.
- Liu, H.H., Bodvarsson, G.S. and Zhang, Guoxiang. 2003. The relationship between the effective matrix diffusion coefficient and test scale, LBNL-53870 Abs.
- Liu, H.H., Haukwa, C.B., Ahlers, C.F., Bodvarsson, G.S., Flint, A. and Guertal, William. 2000. Modeling flow and transport in unsaturated fractured rocks: An evaluation of the continuum approach. Reno, Nevada, LBNL-46571 Abs.
- Liu, H.H., Zhou, Q., Rutqvist, J. and Bodvarsson, G.S. 2002. Understanding the impact of upscaling THM processes on performance assessment, *Lawrence Berkeley National Lab*, Berkeley, CA, pp. 1-36 LBNL-50447.
- Liu, H.-H., Ahlers, C. Fredrik, Mukhopadhyay, S., Hedegaard, R., Houseworth, J., Zhang, G. and Wu, Y-S. 2003. Analysis of Hydrologic Properties Data, MDL-NBS-HS-000014 REV00, BSC, Las Vegas, NV, pp. 102 LBID-2471.
- Liu, H.-H., Ahlers, C. Fredrik, Pan, L. and Wu, Y-S. 2003. Calibrated Properties Model, MDL-NBS-HS-000003 REV01, BSC, Las Vegas, NV, pp. 82 LBID-2472.
- Liu, H.-H., Bodvarsson, G and Zhang, G. 2003. Scale Dependency of the Effective Matrix Diffusion Coefficient. *Water Resources Research*, LBNL-52824.
- Liu, Hui-Hai, Bodvarsson, G.S. and Dane, J.H. 2001. Temperature dependence of a large-scale water retention curves: A case study. *Vadose Zone Journal*, LBNL-49075.
- Liu, H.-H., Bodvarsson, G.S. and Pan, L. 2002. Determination of particle transfer in random walk particle methods for fractured porous media. *Water Resources Research*, **36**(3), pp. 707-713, LBNL-43358.
- Liu, Hui-Hai, Haukwa, Charles B., Ahlers, C. Fredrik, Bodvarsson, Gudmundur S., Flint, Alan L. and Guertal, William B. 2003. Modeling flow and transport in unsaturated fractured rock: An evaluation of the continuum approach. *Journal of Contaminant Hydrology*, **62-63**(Special Issue SI), pp. 173-188, LBNL-51621.

- Liu, Hui-Hai, Rutqvist, Jonny, Zhou, Quanlin and Bodvarsson, Gudmundur S. 2002. Upscaling of normal stress-permeability relationships for fracture networks obeying the fractional Levy motion. *International Conference on Coupled T-H-M-C Processes (GEOPROC)*. Stockholm, Sweden. October 13-15, 2003. LBNL-51671 Abs.
- Liu, H.-H., Salve, R., Wang, J. S. Y., Bodvarsson, G and Hudson, David. 2003. Field Investigation into Unsaturated Flow and Transport in a Fault: Model Analyses. *Jouranal of Contaminant Hydrology*, pp. 39, LBNL-52823.
- Liu, H.-H., Zhang, G. and Bodvarsson, G. 2003. The Active Fracture Model: Its Relation to Fractal Flow Patterns and a Further Evaluation Using Field Observations. *Vadose Zone*, **2**, pp. 43, LBNL-52822.
- Liu, Jianchu, Bodvarsson, G.S. and Wu, Yu-Shu. 2003. Analysis of flow behavior in fractured lithophysal reservoirs. *Journal of Contaminant Hydrology*, **62-63**((Special Issue SI)), pp. 189-211, LBNL-49870.
- Liu, Jianchun, Sonnenthal, Eric L. and Bodvarsson, Gudmundur S. 2003. Calibration of the Yucca Mountain unsaturated zone flow and transport model using porewater chloride data. *Journal of Contaminant Hydrology*, **62-3**(Special Issue S1), pp. 459-476, LBNL-49871.
- Liu, Jianchun, Sonnenthal, Eric L. and Bodvarsson, Gudmundur S. 2002. Using pore-water chloride data to calibrate the Yucca Mountain unsaturated zone flow and transport model. *The Geological Society of America 2002 Denver Annual Meeting*. Denver, CO USA. October 27-30, 2002. LBNL-51084 Abs.
- Liu, Qingjie, Shen, Pingping and Wu, Yu-Shu. 2004. Characterizing Two-Phase Flow Relative Permeabilities in Chemical Flooding Using a Pore-Scale Network Model. *Transport in Porous Media*, LBNL-54750.
- Liu, Zhuping, Nihei, Kurt T., Nakagawa, Seiji, Tomutsa, Liviu and Myer, Larry R. 2002. Extensional wave attenuation and velocities in partially saturated unconsolidated sand at sonic frequencies. *Geophysical Research Letters*, LBNL-51927.
- Liu, Z., Rector, J., Nihei, K., Tomutsa, L., Myer, L. and Nakagawa, S. 2001. Extensional wave attenuation and velocity in partially saturated sand in the sonic frequency range. *SEG international exposition and severty first annual meeting*. San Antonio, TX, **II**: pp. 11808-11811, LBNL-50301.
- Liu, Z., Rector, J.W., Nihei, K.T., Tomutsa, L., Myer, L.R. and Nakagawa, S. 2002. Extensional wave attenuation and velocity in partially-saturated sand in the sonic frequency range. *38th American Rock Mechanics Symposium*. Washington DC. July 8-10, 2001. Swets & Zeitlinger Lisse, LBNL-50831.

- Lliassov, Pavel A., Datta-Gupta, Akhil and Vasco, D. W. 2000. Field-scale characterizing of permeability and saturation distributions using partitioning tracer tests: The Ranger Field, Texas. *SPE Formation Evaluation*. Long Beach, CA. June 19-23, 2000. Society of Petroleum Engineers, Inc., LBNL-53048.
- Lo, Wei-Cheng, Sposito, G. and Majer, E.L. 2002. Immiscible two-phase fluid flows in deformable porous media. *Advances in Water Resources*, **25**(8-12), pp. 1105-1117, LBNL-50624.
- Lu, Guoping. 2003. Kinetic natural attenuation of BTEX at Columbus Air Force Base, Mississippi, LBNL-53214.
- Lu, G, Sonnenthal, Eric and Bodvarsson, G S. 2002. Effect of construction water on chlorine-36 studies at the exploratory studies facility at Yucca Mountain, Nevada: Model development and uncertainty analysis. *American Geophysical Union Fall 2002*. San Francisco, CA. December 6-10, 2002. LBNL-51470 Abs.
- Lu, Guoping, Sonnenthal, Eric L. and Bodvarsson, Gudmundur S. 2003. Implications of halide leaching on chlorine-36 studies at Yucca Mountain, Nevada. *Water Resources Research*, **39**(23), LBNL-50465.
- Lu, Guoping, Sonnenthal, Eric L. and Bodvarsson, G.S. 2003. Quantifying water mixing through sample leaching data, LBNL-53213.
- Lu, Guoping, Sonnenthal, Eric L. and Bodvarsson, Gudmundur S. 2003. Implications of Cl leaching on chlorine-36 studies at Yucca Mountain, Nevada. *2003 AGU Fall Meeting*. San Francisco, CA. December 8-12, 2003. LBNL-53442 Abs.
- Lu, Guoping, Sonnenthal, Eric L. and Bodvarsson, G.S. 2003. Halide-leaching effects on Chlorine-36 studies at Yucca Mountain, LBNL-53868 Abs.
- Lu, Guoping, Wolfsberg, Andrew, Reimus, Paul, Ware, Doug and McGraw, Maureen. 2001. Colloid-facilitated plutonium transport: model formulations and simulations of column experiments. *AGU Conference 2001*. San Francisco, CA. Dec. 10-14, 2001. LBNL-48877 Abs.
- Lu, G and Zhang, D. 2002. Nonstationary stochastic analysis of flow in a heterogeneous semiconfined aquifer. *Water Resources Research*, **38**(8), pp. 30/01-11, LBNL-49754.
- Lu, G. and Zheng, C. 2000. Controlling processes in a CaXO₃ precipitating stream in Huanglong Scenic District, China. *Journal of Hydrology*, **230**, pp. 34-54, LBNL-50302.
- Lu, Guoping and Zheng, Chunmiao. 2003. Hydraulic conductivity dependency of biodegradation of fuel hydrocarbon contaminants in a natural attenuation field site. *American Geophysical Union(AGU) Fall Meeting 2003*. San Francisco, CA. December 8-13, 2003. LBNL-53705 Abs.

- Lu, Guoping and Zheng, Chunmiao. 2003. Natural attenuation of fuel hydrocarbon contaminants: Hydraulic conductivity dependency of biodegradation rates in a field case study. *Modflow and More 2003 Understanding through Modeling*. Golden, Colorado. September 18-21, 2003. LBNL-53443.
- Lu, G, Zheng, C and Wolfsberg, A. 2003. Effect of uncertain hydraulic conductivity on the fate and transport of BTEX compounds at a field site. *Journal of Contaminant Hydrology*, LBNL-50464.
- Lu, Guoping Lu, Bodvarsson, Gudmundur S. and L., Sonnenthal Eric. 2003. Pore water concentrations in fractured rock determined from leached salts, LBNL-54063.
- Lu, Silong, Molz, Fred J. and Liu, H.-H. 2003. An Efficient, Three-Dimensional, Anisotropic, Fractional Brownian Motion and Truncated Fractional Levy Motion Simulation Algorithm Based on Successive Random Additions. *Computer & Geosciences*, **29**, pp. 15-25, LBNL-52537.
- Lunt, I. A., Hubbard, S. S. and Rubin, Y. 2003. Soil moisture content estimation using ground-penetrating radar reflection travel time data. *American Geophysical Union(AGU) Fall Meeting 2003*. San Francisco, CA. December 8-13, 2003. EOS Trans AGU, **84**(46): pp. Abstrct #H21F-04, LBNL-53739 Abs.
- Lunt, I. A., Hubbard, S. S. and Rubin, Y. 2003. Soil moisture content estimation using ground-penetrating radar reflection data. *Journal of Hydrology*, LBNL-53796.
- Maddalena, R. L., McKone, T. E. and Riley, W. J. 2003. Is there a "forest filter effect" for organic pollutants? *Stochastic Environmental Research & Risk Assessment*, **17**(4), pp. 231-234, LBNL-51882.
- Maher, Katherine, DePaolo, Donald J., Conrad, Mark and Serne, R. Jeff. 2003. Vadose zone infiltration rate at Hanford, Washington, inferred from Sr isotope measurements. *Water Resources Research*, **39**(8), pp. 1204 doi: 1210.1029/1202WR001742, LBNL-53747.
- Mailloux, B., Fuller, M., Onstott, T.C., Hall, J., Dong, H., Beavis, A. J., De Flaun, M., Strenger, S. H., Rothmel, R. K., Green, M., Swift, D.J.P., Griffin, T., Hubbard, S. and Chen, J. 2001. The role of physical heterogeneity on the field-scale transport and attachment of bacteria. *Water Resources Research*, LBNL-48533.
- Mailloux, Brian J., Devlin, Stephanie, Onstott, Tullis C., Sigman, Daniel, Hall, James, Fuller, Mark E., DeFlaun, Mary F., Streger, Sheryl H., Williams, Kenneth H., Hubbard, Susan S. and McCarthy, John;. 2002. The fate of nitrate during stimulaiton of coastal plain sediments. *Fall American Geophysical union Meeting 2002*. San Francisco, CA EOS, LBNL-51424 Abs.

- Majer, E. 2002. 3-D Seismic methods for geothermal reservoir exploration and assessment, *LBNL*, Berkeley, CA LBNL-49881.
- Majer, E., Daley, T., Gritto, R., Myer, L., Nakagawa, S. and Nihei, K. T. 2000. Earth Sciences Division Annual Report 1999-2000. *Fracture Quantification in Gas Reservoirs*, Berkeley, Ca LBNL-47002.
- Majer, Ernest, Daley, T.M. and Gritto, R. 2000. Single Well Seismic Imaging: Recent Advances and Status. Long Beach, CA. June 2000. LBNL-45225 Abs.
- Majer, Ernest, Daley, T.M., Peterson, J.E., Hubbard, S.S., Williams, K.H., Brockman, F., Woods, T. and Peterson, L. 2000. Development and application of high resolution multicomponent seismic imaging for defining heterogeneity controlling flow and transport. Atlanta, GA. April 2000. LBNL-45226 Abs.
- Majer, E., Gritto, R. and Daley, T. 2000. Earth Sciences Division Annual Report 1999-2000. *Single-Well Seismic Imaging*, Berkeley, CA LBNL-47002.
- Majer, E., Gritto, R., Daley, T., Kirkpatrick, A. and Peterson, J. 2000. Earth Sciences Division Annual Report 1999-2000. *Three-Dimensional Imaging of Geothermal Reservoirs using Active and Passive Methods*, Berkeley, CA LBNL-47002.
- Majer, Ernest, Korneev, Valery, Li, Guoping, Cooper, David, Davis, Thomas, Washbourne, John and Merry, Harold. 2001. Weyburn field horizontal-to-horizontal crosswell seismic profiling: Part 1 - Planning and data acquisition. *SEG Annual Meeting 2001*. San Antonio, TX. September 9-14, 2001. pp. 460-463, LBNL-48527.
- Majer, E., Queen, J., Daley, T., Murphy, J., Fortuna, M., Lynn, H.B., Coates, R.T., Eike, P., Sinton, J., Cox, D., Myer, L., Nihei, K. and Nakagawa, S. 2002. Scaling between logs, single well, VSP and surface seismic for fracture quantification in naturally fractured gas reservoirs. *72nd Annual Meeting of the SEG International Exop*. Salt Lake City, UT. October 6-11, 2002. pp. 2381-2384, LBNL-50699.
- Majer, Ernest, Slater, Lee, Ward, Andrew, Lesmes, David, Hubbard, Susan and Cumbest, Randy. 2003. Airborne and Surface Geophysical Method Verification. Evest, Loreen, LBNL-52460.
- Majer, E., Williams, K., Daley, T. and Peterson Jr., J.E. 2001. Mock tank high-resolution seismic and radar measurements: final report February 28, 2001, *Pacific Northwest National Lab*, Richland, WA, pp. B.1-B.39 LBNL-50745.
- Majer, Ernest L., Daley, Thomas M., Gritto, Roland, Korneev, Valeri and Li, Guoping. 2001. 2001. Application of crosswell and single well seismic methods for mapping CO₂ movement. *Geological Society of America 97th Annual Meeting*. Long Beach, CA. April 9-11, 2001. LBNL-47431 Abs.

- Majer, E.L., Daley, T.M., Myer, L.R., Nihei, K., Queen, J., Sinton, J., Murphy, J., Fortuna, M., Lynn, H.B., Imhoff, M.A. and Wilson, R. 2001. San Juan Fracture Characterization Project: Status and current results LBNL-48908.
- Majer, Ernest L., Davis, Thomas L., Benson, Robert D., Li, Guoping, Coates, Richard T., Korneev, Valerie A. and Walter, Lawrence A. 2001. Integration of high resolution borehole seismic data with multi-component 3-D surface seismic data for cost effective reservoir recovery. *EAGE Annual Meeting*. Amsterdam, Netherlands. June 6-12, 2001. LBNL-47426 Abs.
- Majer, E.L., Li, G. and Korneev, V.A. 2000. High resolution crosswell seismic imaging in horizontal wells prior to CO₂ injection at the Weyburn oil field, Saskatchewan, Canada. *AGU Annual Meeting*. San Francisco, CA. December 19, 2000. LBNL-47319 Abs.
- Majer, E.L., Williams, K.H., Peterson, J.E. and Daley, T. 2000. High resolution imaging of vadose zone transport using crosswell radar and seismic methods, *DOE Vadose Zone Science and Technology Project*, pp. 25 LBNL-47465.
- Majer, Ernest L., Williams, Kenneth H., Peterson, John E. and Daley, Thomas E. 2002. High resolution imaging of vadose zone transport using crosswell radar and seismic methods. *Vadose Zone Journal*, LBNL-49022.
- Majer, Ernest L., Williams, Kenneth H., Peterson, John E. and Daley, Thomas M. 2002. Application of high resolution crosswell radar and seismic for mapping flow in the vadose zone. *SEG International Expo and Annual Meeting*. Salt Lake City, UT. October 6-11, 2002. LBNL-50701.
- Malavé, J., Borglin, S. E., Rios-Valezquez, C. and Hazen, T. C. 2004. Study of Microbial Community Structure Using Phospholipid Fatty Acid Analysis (PLFA) at a Chromium Contaminated Site. *American Society for Microbiology 104th Meeting*. New Orleans, LA. May 19-23, 2004. LBNL-54287 Abs.
- Manga, Michael, Brodsky, Emily E. and Boone, Michael. 2003. Response of streamflow to multiple earthquakes. *Geophysical Research Letters*, **30**(5), pp. 1214; doi:1210.1029/2002GL016618, LBNL-54784.
- March, John, Hudgins, Mark, Chauhan, Sadhana and Hazen, Terry C. 2001. Successful implementation of an aerobic landfill bioreactor. *Environmental Science & Technology*, LBNL-47639.
- Marques, Osni and Vasco, Don. 2000. Solving large linear inverse problems in geophysics by means of Eigenvalue calculations. Washington, D.C., LBNL-45324.
- Marshall, J.D., Riley, W.J., McKone, T.E. and Nazaroff, W.W. 2003. Population, proximity, and persistence: Incorporating exposure into life-cycle assessment, LBNL-53038 Abs.

- Marshall, J. D., Riley, W. J. , McKone, T. E. and Nazaroff, W. W. 2003. Intake fraction of primary pollutants: Motor vehicle emissions in the South Coast Air Basin. *Atmospheric Environment*, **37**(24), pp. 3455-3468, LBNL-53457.
- Martinez, R. E., Rios-Valezquez, C., Andersen, G. L. and Hazen, T. C. 2003. Molecular Analysis of the Microbial Community Structure in Chromium Contaminated Sites before and after *In Situ* Bioreduction Stimulation by Lactate Injection. *American Society for Microbiology 104th Meeting*. New Orleans, LA. May 19-23, 2004. LBNL-54286 Abs.
- Maultzsch, S. , Liu, E., Li, X.-Y. , Daley, T. M., Queen, J. H. and Cox, D. 2003. Shear-Wave Splitting Analysis Of A 3d Vsp From The San Juan Basin. *EAGE 65th Conference & Exhibition*. Stavanger, Norway. June 2 - 5, 2003. LBNL-53969 Ext. Abs.
- Mays, David and Faybishenko, Boris. 2000. Washboards in unpaved highways as a complex dynamic system. *Journal of Complexity*, **5**(6), pp. 51-60, LBNL-45838.
- Mays, David C., Faybishenko, Boris A. and Finsterle, Stefan. 2002. Information entropy to measure temporal and spatial complexity of unsaturated flow in heterogeneous media - art. no. 1313. *Water Resources Research*, **38**(12), pp. 1313, LBNL-49181.
- McKone, T., Riley, W., Cohen-Hubal, E., Furtaw, E. and Dermal, C. 2002. Uptake of pesticides during exposure events with intermittent surface contact: Malathion case study, LBNL-50303.
- McKone, T.E., Thatcher, T.L., Fisk, W.J., Sextro, R.G., Sohn, M.D., Delp, W.W. and Riley, W.J. 2002. Factors affecting the concentration of outdoor particles indoors: Existing data and data needs. *Indoor Air 2002 - The 9th International Conference on Indoor Air Quality and Climate*. Monterey, CA. June 30 - July 5, 2002. LBNL-49570.
- Miller, N. 2000. Preparing for a climate change: The potential consequences of climate variability and change: Southwest, University Arizona Press, pp 60, LBNL-47256.
- Miller, Norman. 2000. Regional climate simulation -- Evaluation and projections, LBNL-46486.
- Miller, N. 2001. Climate change impacts on the United States: The potential consequences of climate variability and change: Overview National Assessment Synthesis Team. Cambridge University Press, pp. 154, LBNL-47528.
- Miller, Norman and Jin, Jiming. 2003. An analysis of climate variability and snowmelt mechanisms in mountainous regions. *Journal of Hydrometeorology*, LBNL-53845.
- Miller, Norman L. 2000. NASA/RESAC Annual Report: California Water Resources Research and Application Center LBNL-47646.
- Miller, N.L. 2000. Downscaled western United States, LBNL-45112.

- Miller, N.L. 2001. RESAC Annual Progress Report 2001 LBNL-47753.
- Miller, Norman L. 2003. California Climate Change, Hydrologic Response, and Flood Forecasting. *International Expert Meetin on Urban Flood Management*. Rotterdam, NL. November 20-21, 2003. LBNL-54041.
- Miller, N L. 2003 California Water Resources Research and Applications Center: RESAC Annual Progress Report, Sacramento, pp. 1-11 LBNL-52777.
- Miller, Norman L., Bashford, Kathy E. and Strem, Eric. 2001. Climate change sensitivity study of California hydrology: A report to the California Energy Commission LBNL-49110.
- Miller, N L, Bashford, K E and Strem, E. 2003. Potential impacts of climate change on California hydrology. *Journal of the American Water Resources Association (JAWRA)*, **39**(4), pp. 771-784, LBNL-51313.
- Miller, Norman L. and co-authors, 18. 2003. The DOE water cycle pilot study. *Bulletin of the American Meteorological Society*, LBNL-53826.
- Miller, Norman L., Gutowski Jr., William J., Kim, Jinwon and Strem, Eric. 2001. Assessing California streamflow for present day and 2040 to 2049 climate scenarios. *Journal of Hydrometeorology*, LBNL-47987.
- Miller, Norman L. and Kim, Jinwon. 2000. Climate change sensitivity analysis for two California watersheds: Addendum to downscaled climate and streamflow study of the Southwestern United States. *Journal of The American Water Resources Association*, **36**(3), pp. 657-661, LBNL-45877.
- Molinero, Jorge, Samper, Javier, Changbing, Yang and Guoxiang, Zhang. 2003. Modeling coupled chemical reactive transport and microbial processes in a fracture zone. *10th International High-Level Radioactive Waste Management Conference*. Las Vegas, NV. March 30-April 3, 2003. LBNL-53205.
- Montanez, Jessica, Mendez, Loyda, Chauhan, Sadhana and Hazen, Terry. 2000. Polynuclear aromatic hydrocarbons in situ bioremediation treatability test; focus on contaminant disappearance by HPLC analysis. *2000 Annual Meeting of American Institute for Chemical Engineers*. Los Angeles, CA. November 12-17, 2000. LBNL-47003 Abs.
- Montgomery, David R. and Manga, Michael. 2003. Streamflow and Water Well Responses to Earthquakes. *Science*, **300**(5628), pp. 2047-2049, LBNL-54780.
- Moore, D.E., Hickman, S., Lockner, D.A. and Dobson, P.F. 2001. Hydrothermal minerals and microstructures in the Silangkitang geothermal field along the Great Sumatran fault zone, Sumatra, Indonesia. *Geological Society of America Bulletin*, **113**(9), pp. 1179-1192, LBNL-49241.

- Moore, J. N., Norman, D. I. and Kennedy, B. M. 2001. Fluid inclusion gas compositions from an active magmatic-hydrothermal system: a case study of The Geysers geothermal field, USA. *Chemical Geology*, **173**(1-3 Special Issue S1), pp. 3-30, LBNL-44954.
- Mordis, G., Collett, T., Dallimore, S. R., Satoh, T., Hancock, S. and Weatherhill, B. 2002. Numerical studies of gas production from several CH₄-hydrate zones at the Mallik Site, McKenzie Delta, Canada. *Journal of Petroleum Science and Engineering*, LBNL-50257.
- Moreau, John W., Chan, Clara S., Williams, Kenneth H., Suzuki, Yohey and Banfield, Jillian F. 2004. Characterization and application of mechanisms of microbially induced biomineralization. *Goldschmidt Conference 2004*. Copenhagen, Denmark. June 5-11, 2004. LBNL-54460 Abs.
- Moridis, G. 2001. 2001. Semianalytical solutions of transport of radioactive straining multidisperse colloids in layered fractured media. *Water Resources Research*, **38**(12), pp. 46-41 46-24, LBNL-45872.
- Moridis, George. 2001. Semi-analytical solutions of radionuclide and reactive transport in fractured layered media LBNL-44155.
- Moridis, G. 2002. Numerical simulation studies of thermally-induced gas production from hydrate accumulations at the Mallik Site, McKenzie Delta, Canada. *SPE International 2002 Asia Pacific Oil & Gas*. Melbourne, Australia. October 08-10, 2002. **SPE 77861**, LBNL-50256.
- Moridis, G. 2003. Numerical Studies of Hydrate Preservation in Cores and of Gas Production from Permafrost Hydrate Accumulations. *Transport in Porous Media*, LBNL-52828.
- Moridis, G. 2003. Gas Production from Class 1 Hydrate Accumulations. *Recent Advances in the Study of Gas Hydrates*. Kluwer Academic, LBNL-52827.
- Moridis, G. 2003. EOS9nT V2.0 User's Manual - A Fortran 90 Simulator of Water Flow and Solute/Colloid Transport in the Subsurface LBNL-52826.
- Moridis, G. and Collett, T. 2003. Strategies for Gas Production From Hydrate Accumulations Under various Geologic Conditions. *TOUGH Symposium 2003*. Berkeley, CA. May 12-14, 2003. pp. 8, LBNL-52568.
- Moridis, G. and Hu, Q. 2000. Radionuclide Transport Models Under Ambient Conditions, MDL-NBS-HS-000008 REV 00 LBID-2331.
- Moridis, G., Hu, Q. and Bodvarrson, Gudmundur. 2000. Preliminary Studies of Radioactive Solute Transport in the Unsaturated Zone at Selected Yucca Mountain Locations, May 2000. *Journal of Hydrology*, LBNL-45873.

- Moridis, G., Hu, Q., Wu, Y.-S. and Bodvarsson, Gudmundur. 2000. Preliminary 3D Site-Scale Studies of Radioactive Solute Transport in the Unsaturated Zone at Selected Yucca Mountain Locations, May 2000. *Journal of Contaminant Hydrology*, LBNL-45875.
- Moridis, G., Seol, Yongkoo and Wu, Yu-Shu. 2003. Modeling Studies of Mountain-Scale Radionuclide transport in the Unsaturated Zone at Yucca Mountain, Nevada. *TOUGH Symposium 2003*. Berkeley, CA. May 12-14, 2003. Proceedings, TOUGH Symposium 2003, LBNL-52567.
- Moridis, G; Collett, T; Dallimore, S; Satoh, T; Hancock, S; and Weatherill, B. 2002. Numerical simulation studies of gas production scenarios from hydrate accumulations at the mallik site, mckenzie delta, canada. *4th International Conference on Gas Hydrates*. Yokohama, Japan: pp. 6, LBNL-49764.
- Moridis, G.J. 2000. Radioactive or reactive tracer transport in flowing fracture-matrix systems LBNL-47951.
- Moridis, George J. 2001. Semianalytical solutions of radioactive solute and colloid transport in layered fractured media. San Francisco, CA, LBNL-48901 Abs.
- Moridis, G.J. 2001. 2002. Semianalytical solutions of radioactive or reactive solute transport in variably-fractured layered media. *Water Resources Research*, **38**(12), pp. 1310, LBNL-45871.
- Moridis, George J. 2003. Numerical studies of gas production from methane hydrates. *SPE Gas Technology Symposium*. Calgary, Alberta, Canada. April 30 - May 2, 2002. Society of Petroleum Engineers, **32**(8): pp. 359-370, LBNL-49765.
- Moridis, George J., Collett, Timothy S., Digert, Scott and Hunter, Robert. 2002. Strategies for gas production from hydrate accumulations under various geological and reservoir conditions. *2nd Workshop of the International Committee on Methane Hydrates*. Washington, DC, LBNL-51677 Ext. Abs.
- Moridis, G.J., Hu, Q., Wu, Y.-S. and Bodvarsson, G.S. 2000. Modeling studies of radionuclide transport in the unsaturated zone of Yucca Mountain, Nevada LBNL-45870.
- Moridis, G.J., Hu, Q., Wu, Y.-S. and Bodvarsson, G.S. 2003. Preliminary 3-D site-scale studies of radioactive colloid transport in the unsaturated zone at selected Yucca Mountain locations. *Journal of Contaminant Hydrology*, **60**(3-4), pp. 251-286, LBNL-45876.
- Morrison, H. F., Becker, A., Gasperikova, E. and Smith, J. T. 2003. Detection and classification of buried metallic objects, *Strategic Environmental Research and Development Program (SERDP)*, pp. 54 LBNL-53962.

- Morrison, H. Frank, Becker, Alex, Smith, Torquil and Gasperikova, Erika. 2002. Detection and Classification of Buried Metallic Objects. *64th EAGE Annual Conference and Exhibit*. Florence, Italy. May 27-30, 2002. LBNL-53962 Abs.
- Mukhopadhyay, S. and Tsang, Y. 2003. Estimation of Host Rock Thermal Conductivities Using the Temperature Data From the Drift Scale Test at Yucca Mountain, Nevada. *Water Resources Research*, LBNL-54102.
- Mukhopadhyay, Sumit and Sahimi, Muhammad. 2000. Calculation of the effective permeabilities of field-scale porous media. *Chemical Engineering Science*, **55**(20), pp. 4495-4513, LBNL-46575.
- Mukhopadhyay, Sumit and Tsang, Yvonne W. 2002. Understanding the anomalous temperature data from the Large Block Test at Yucca Mountain, Nevada. *Water Resources Research*, **38**(10), pp. 28-21 to 28-12, LBNL-49124.
- Mukhopadhyay, S. and Tsang, Y.W. 2003. Uncertainties in coupled thermal-hydrological processes associated with the drift scale test at Yucca Mountain, Nevada. *Journal of Contaminant Hydrology*, **62-63**, pp. 595-612, LBNL-49872.
- Murray, C.J., Roden, E.E., Overstreet, K., Chin, Yi-Ju, Chen, J. and Hubbard, S. 2000. Spatial heterogeneity of microbial iron reduction potential at the South Oyster focus area, Virginia. *EOS*, **81**(48), LBNL-48442 Abs.
- Myer, L. 2000. Seismic wave propagation in fractured rock. *International Journal of Rock Mechanics and Mining Sciences*, **37**(1-2), pp. 231-243, LBNL-44822.
- Myer, Larry. 2000. Monitoring of CO₂ sequestration using integrated geophysical and reservoir data, LBNL-45231.
- Myer, L. 2000. Role of local dilatation in formation of compaction bands, LBNL-46252.
- Myer, L. 2000. A strategy for monitoring of geologic sequestration of CO₂. *ENERGEX 2000*. Las Vegas, NV Proceedings of the 8th International Energy forum: pp. 1226-1231, LBNL-46700.
- Myer, L. 2001. Laboratory measurement of geophysical properties for monitoring of CO₂ sequestration. *1st National Conference on Carbon Sequestration*. Morgantown, WV. May 14-17, 2001. **Session 6A**, LBNL-47643.
- Myer, Larry, Benson, Sally, Cole, David, Daley, Tom, Doughty, Christine, Dutton, Alan, Freifeld, Barry, Gunter, William, Holtz, Mark, Hovorka, Susan, Hoversten, Mike, Kennedy, B. Mack, Kharaka, Yousif, Knauss, Kevin, Knox, Paul, Majer, Ernie, Phelps, Tommy, Pruess, Karsten and Robinson, John. 2004. Subsurface Monitoring and Verification at the Frio Pilot Test. *7th International Conference on Greenhouse Gas Control Technologies*. Vancouver, Canada. September 5-9, 2004. LBNL-54221 Ext. Abs.

- Myer, Larry, Hovorka, Susan, Hoversten, Mike, Fouad, Khaled; and Holtz, Mark;. 2003. Geophysical Characterization and Monitoring for the Frio Pilot Test. *AGU Fall Meeting*. San Francisco, CA. December 8-12, 2003. LBNL-53637 Abs.
- Myer, Larry, Rutqvist, Jonny, Vasco, Don and Tsang, Chin-Fu. 2002. Rock mechanics applications to geological sequestration of CO₂. *10th International Congress on Rock Mechanics*. Johannesburg, South Africa. September 08-12, 2003. LBNL-51274 Abs.
- Myer, Larry and Surles, Terry. 2003. West Coast Regional Carbon Sequestration Partnership. *7th International Conference on Greenhouse Gas Control Technologies*. Vancouver, Canada. September 5-9, 2004. LBNL-54223 Ext. Abs.
- Myer, Larry R. 2000. Fractures as collections of cracks. *International Journal of Rock Mechanics and Mining Science*, **37**(1-2), LBNL-44807.
- Myer, Larry R. 2003. Geomechanical Risks in Coal Bed Carbon Dioxide Sequestration, *LBNL*, Berkeley, CA LBNL-53250.
- Myer, Larry R., Benson, Sally M., Byrer, Charles, Cole, David, Doughty, Christine A., Gunter, William, Hoversten, G. Michael, Hovorka, Susan, Johnson, James W., Knauss, Kevin G., Kovscek, Anthony, Law, David, Lippmann, Marcelo J., Majer, Ernest L., van der Meer, Bert, Moline, Gerry, Newmark, Robin L., Oldenburg, Curtis M., Orr, Jr., Franklin M., Pruess, Karsten and Tsang, Chin-Fu. 2002. The GEO-SEQ project: A status report. *GHGT-6*. Kyoto, Japan. October 1-4, 2002. pp. 1625-1628, LBNL-51278 Pstr.
- Myer, Larry R., Hoversten, G. Michael and Doughty, Christine A. 2002. Sensitivity and cost of monitoring geologic sequestration using geophysics. *Greenhouse Gas Control Technologies 6 (GHGT6)*. Kyoto, Japan, LBNL-49687 Abs.
- Myer, Larry R., Hoversten, G. Michael and Gasperikova, Erika. 2002. Sensitivity and cost of monitoring geologic sequestration using geophysics. *GHGT-6*. Kyoto, Japan, **1**: pp. 377-384, LBNL-51296 Ext. Abs.
- Myer, Larry R. and Nakagawa, Seiji. 2000. Mechanical and seismic properties of weak granular rock. *Proceedings of the 3rd International Workshop on the Application of Geophysics to Rock and Soil Engineering*. Melbourne, Australia. November 18, 2000. pp. 66-71, LBNL-47642.
- Myneni, S., Waychunas, G., Traina, S. and Brown, G. 2002. What happens to sulfate when it reacts with iron-oxide surfaces? , LBNL-50305.
- Myneni, S.C.B. 2000. Arsenate interactions with CaO: formation of Johnbaumite, LBNL-45115.
- Myneni, S.C.B. 2000. Experimental and theoretical vibrations spectroscopic evaluation of arsenate coordination in aqueous solutions, solids an at mineral-water interfaces, LBNL-

45113.

Myneni, S.C.B. 2000. Green rust in the lab and the soil, LBNL-45114.

Myneni, Satish C. B. 2000. X-ray and Vibrational Spectroscopy of Sulfate in Earth Materials. Alpers, C.N., Jambor, J.L. and Nordstrom, D.K., Eds. *Reviews in Mineralogy & Geochemistry*. Mineralogical Society of America, pp. 113-172, LBNL-54781.

Myneni, Satish C. B. 2002. Formation of stable chlorinated hydrocarbons in weathering plant material. *Science*, **295**(5557), pp. 1039-1041, LBNL-54086.

Myneni, S.C.B., Luo, Y., Naslund, L. A., Cavalleri, M., Ojamae, L., Ogasawara, H., Pelmeshnikov, A., Wernet, Ph., Vaterlein, P., Heske, C., Hussain, Z., Pettersson, L. G. M. and Nilsson, A. 2002. Spectroscopic probing of local hydrogen-bonding structures in liquid water. *Journal of Physics: Condensed Matter*, **14**(8), pp. L213-L219, LBNL-48346.

Myneni, Satish C. B., Waychunas, Glenn A., Traina, Samuel J. and Brown, Gordon E. 2000. Molecular investigation of sulfate complexation on Fe-oxide surfaces. *Abstracts of Papers American Chemical Society*, **220**(Part 1), pp. ENVR 178., LBNL-50306.

Nadeau, R. and McEvilly, T. 2004. Periodic Pulsing of Characteristic Microearthquakes on the San Andreas Fault. *Science*, **303**, pp. 220-222, LBNL-53593.

Nakagawa, S. 2000. Amplitude anisotropy of seismic wave propagation in a medium containing parallel infinite fractures, LBNL-46251.

Nakagawa, S. 2000. Resonance inversion for elastic noduli or anisotropic rocks, LBNL-46256.

Nakagawa, S. and Myer, L.R. 2001. Mechanical and acoustic properties of weakly cemented granular rocks. *38th American Rock Mechanics Association Symposium*. Washington, DC. July 08-10, 2001. Swets & Zeitlinger Lisse: pp. 3-10, LBNL-50814.

Nakagawa, S., Nihei, K. and Myer, L. 2002. Elastic wave propagation along a set of parallel fractures. *Geophysical Research Letters*, **29**(16), pp. 1784 DOI: 1710.1029/2002GL014925, LBNL-49623.

Nakagawa, Seiji, Nihei, Kurt T. and Myer, Larry R. 2000. Stop-pass behavior of acoustic waves in a 1-D fractured system. *Journal of the Acoustical Society of America*, **107**(1), pp. 40-50, LBNL-44697.

Nakagawa, Seiji, Nihei, K.T. and Myer, L.R. 2000. Shear-induced conversions of seismic waves across single fractures. *International Journal of Rock Mechanics and Mining Sciences*, **37**(1-2), pp. 203-218, LBNL-44806.

- Nakagawa, Seiji, Nihei, Kurt T. and Myer, Larry R. 2000. Wave propagation along a sheared fracture. *JGR- Solid Earth*, LBNL-44839.
- Nakagawa, S., Nihei, K. T. and Myer, L. R. 2000. Seismic Theory: Fractured Media and Time-lapse. *Society of Exploration Geophysicists*. Calgary, Canada. August, 6-11, 2001. **ST 6.1**: pp. 2353-2356, LBNL-48529.
- Nakagawa, Seiji, Nihei, Kurt T. and Myer, Larry R. 2001. Frequency-dependent azimuthal anisotropy of seismic reflectivity from a layer with discrete fractures. *American Geophysical Union (AGU)*. San Francisco, CA. December 10-14, 2001. EOS. Trans. AGU, **82**(47), LBNL-50827 Abs.
- Nakagawa, Seiji, Nihei, Kurt T.; and Myer, Larry R. 2003. Plane wave method for elastic wave scattering by a heterogeneous fracture. *Journal of Acoustical Society of America*, LBNL-52207.
- Nakagawa, Seiji, Nihei, Kurt T., Myer, Larry R. and Majer, Ernest L. 2003. Three-Dimensional elastic wave scattering by a layer containing vertical periodic fractures. *Journal of Acoustical Society of America*, **113**(6), pp. 3012-3023, LBNL-50241.
- Nakao, Shinsuke, Najita, Julie and Karasaki, Kenzi. 2000. Hydraulic well testing inversion for modeling fluid flow in fractured rocks using simulated annealing: A case study at Raymond field site, California. *Journal of Applied Geophysics*, **45**(3), pp. 203-223, LBNL-48530.
- Narasimhan, T. N. 2003. A finite world, earth sciences, and public trust. *Ground Water*, **41**(1), pp. 11-14, LBNL-51757.
- Narasimhan, T.N. and Reynolds, Jesse. 2000. Protection of subsurface aquifers: A broader context. *Acta Hungaria*, LBNL-44485.
- Neimi, A. and Bodvarsson, G.S. 2001. Preliminary capillary hysteresis simulations in fractured rocks, Yucca Mountain, Nevada, LBNL-49108.
- Nelson, J. L., Paradis, S., Christensen, J. N. and Gabites, J. 2002. Canadian cordilleran Mississippi Valley-type deposits: A case for Devonian-Mississippian backarc hydrothermal origin. *Economic Geology*, **97**(5), pp. 1013-1036, LBNL-51209.
- Newman, Gregory A. and Hoversten, G. Michael. 2000. Solution strategies for two and three dimensional electromagnetic inverse problems. *Inverse Problems*, **16**(5), pp. 1357-1375, LBNL-46478.
- Newman, Gregory A., Hoversten, G. Michael and Alumbaugh, David L. 2002. Three dimensional magnetotelluric modeling and inversion: Application to sub-salt imaging, In Three Dimensional Electromagnetics: Proceedings of the Second international Symposium, Michael S. Zhdanov, Ed.,. *Three-Dimensional Electromagnetics*. Elsevier

- Science Pub. Co., pp. 127-152, LBNL-48528 Bk.
- Nguyen, T.S., Borgesson, L., Chijimatsu, M., Rutqvist, J., Fujita, T., Hernelind, J., Kobayashi, A., Ohnishi, Y., Tanaka, M. and Jing, L. 2001. Hydro-mechanical response of a fractured rock mass to excavation of a test pit--the Kamishi mine experiment in Japan. *International Journal of Rock Mechanics and Mining Sciences*, **38**, pp. 79-94, LBNL-46150.
- Nicholson, T., Tsang, Chin-Fu and Hutter, Adam. 2000. Scientific and technical issues related to Mayak and Chernobyl sites: Summary of a round table discussion. *Hydrological Science and Technology*, **16**(1-4), pp. 3-11, LBNL-48689.
- Niemi, Auli, Tsang, Chin-Fu and Finsterle, Stefan. 2003. Effect of water-NAPL interference on NAPL transport in heterogeneous variably saturated soils, LBNL-52839.
- Nihei, Kurt. 2000. Frictional effects on the volumetric strain of sandstone. *International Journal of Rock Mechanics and Mining Science*, **37**(1-2), pp. 121-132, LBNL-44805.
- Nihei, K. 2000. Acoustic signatures of a fracture during air injection, LBNL-46255.
- Nihei, Kurt. 2000. Fracture channel waves, LBNL-44808.
- Nihei, K. , Nakagawa, S. and Myer, L. 2001. Fracture imaging with converted elastic waves. *38th U.S. Rock Mechanics Symposium*. Washington, DC. July 8-10, 2001. Swets & Zeitlinger Lisse: pp. 1305-1311, LBNL-50789.
- Nihei, K., Tomutsa, L., Myer, L. and Geller, J. 2002. Sonic frequency attenuation in partially - saturated, unconsolidated sand by z. liu, LBNL-50308.
- Nihei, K.T. 2000. Defect detection in bonded structures using the reverberant wavefield, LBNL-44995.
- Nihei, Kurt T. 2003. Natural Fracture Characterization Using Passive Seismic Illumination LBNL-46249.
- Nikolskii, I. and Faybishenko, B. 2000. Semi-analytical approach for calculating the horizontal drain spacing taking into account infiltration through the vadose zone. *Soil Science Society of America Journal*, LBNL-45510.
- Nishiizumi, Kunihiro, Caffee, Marc W. and DePaolo, Donald J. 2000. Preparation of Ca-⁴¹ AMS standards. *Beam Interactions with Materials & Atom Nuclear Instruments and Methods in Physics Research - Section B (NIM B)*, **172**, pp. 399-403, LBNL-52360.
- Nitsche, H., Shaughnessy, D., Shuh, D., Waychunas, G. and Serne, R. 2002. Transuranic interfacial reaction studies on manganese oxide hydroxide mineral surfaces, LBNL-50309.

- Noone, D., Riley, W., Still, C. and Randerson, J. 2002. Diagnosing impacts of changes in the biosphere by modeling ^{18}O in atmospheric CO_2 with a general circulation model, LBNL-50311.
- Noone, D., Still, C. and Riley, W. 2002. Influence of land use change on the ^{18}O in atmospheric CO_2 : A comparison of pre-industrial, modern and future scenarios, LBNL-50310.
- Oh, K.C. 2000. Biologically active ("Bioactive" absorbents/adsorbents and additives used in pollution control and remediation.) Acceptance criteria and process guidance LBNL-46862.
- Oh, Keun-Chan, Don, Christine and Stringfellow, William T. 2000. Enhanced treatment of MTBE using iso-Pentane as a co-substrate in an up-flow fluidized bed bioreactor. *11th West Coast Conference Contaminated Soil Sediments and Water Association for the Environmental Health of Soils*. San Diego, CA. March 26-30, 2000. LBNL-46451 Abs.
- Oh, Keun-Chan, Kim, Yongbum and Buchanan, Bob B. 2000. Phytoremediation of phenanthrene and anthracene contaminated soils using different species of plants. San Diego, CA, LBNL-46919 Abs.
- Oh, Keun-Chan and Stringfellow, William T. 2001. Treatment of MTBE in a fluidized bed bioreactor using iso-pentane as aco-substrate. *Sixth International Symposium on In-Situ and On-site Bioremediation*. San Diego, CA. June 4-7, 2001. LBNL-46963 Abs.
- Oh, Keun-Chan and Stringfellow, William T. 2003. Determination of Methyl tert-Butyl Ether and tert-Butyl Alcohol in Water by Solid-Phase Microextraction/Head Space Analysis in Comparison to EPA Method 5030/8260B, Berkeley, CA LBNL-53866.
- Oldenburg, Curt and Benson, Sally. 2002. Feasibility of carbon sequestration with enhanced gas recovery (CSEGR). *GHGT-6*. Kyoto, Japan. October 1-4, 2002. LBNL-49762.
- Oldenburg, Curt, Law, D.H.-S., Le-Gallo, Y. and White, S.P. 2002. Mixing of CO_2 and CH_4 in gas reservoirs: Code comparison studies, in *Greenhouse Gas Control Technologies. 6th International Conference on Greenhouse Gas Control Technology (GHGT-6)*. Kyoto, Japan. September 30 - October 04, 2002. Elsevier, 1: pp. 443-448, LBNL-49763.
- Oldenburg, Curt, Unger, Andre and Hepple, R. P. 2002. On atmospheric dispersion of CO_2 seepage from geologic carbon sequestration, *LBNL* LBNL-51734.
- Oldenburg, Curtis.M. 2002. Foreword to the special issue on strongly coupled density-dependent flow in porous media. *Transport in Porous Media*, **47**(2), pp. 123-124, LBNL-49076.
- Oldenburg, C.M. 2001. T2LBM version 1.0: Landfill bioreactor model for TOUGH2., Berkeley, CA LBNL-47961.

- Oldenburg, Curtis M. 2002. Carbon dioxide as cushion gas for natural gas storage. *Energy and Fuels*, **17**(1), pp. 240-246, LBNL-51053.
- Oldenburg, C. M. 2003. Carbon Sequestration in Natural Gas Reservoirs: Enhanced Gas Recovery and Natural Gas Storage. *TOUGH Symposium 2003*. Berkeley, CA. May 12-14, 2003. pp. 8, LBNL-52476.
- Oldenburg, C.M. and Benson, S.M. 2001. Carbon sequestration with enhanced gas recovery: Identifying candidate sites for pilot study. Washington, D.C., LBNL-47580.
- Oldenburg, Curtis M., Benson, Sally M. and Pruess, Karsten. 2000. On CO₂ injection into depleted natural gas reservoirs for carbon sequestration and enhanced gas recovery. Washington, DC, LBNL-46550 Abs.
- Oldenburg, Curtis M., Benson, S.M. and Pruess, Karsten. 2000. Effects of reservoir heterogeneity on carbon dioxide injection into depleted natural gas reservoirs. Golden, CO, LBNL-46549 Abs.
- Oldenburg, Curtis M., Borglin, Sharon E. and Hazen, Terry C. 2001. Process modeling of flow, transport, and biodegradation in landfill bioreactors. *American Geophysical Union Fall Meeting 2001*. San Francisco, CA. December 10-14, 2001. LBNL-48904 Abs.
- Oldenburg, C.M., Borglin, S.E. and Hazen, T.C. 2002. Multiphase modeling of flow, transport, and biodegradation in a mesoscale landfill bioreactor, LBNL-50027.
- Oldenburg, Curtis M., Borglin, Sharon E. and Hazen, Terry C. 2002. Simulations of Flow, Transport, and Biodegradation in Landfills. *American Geophysical Union Fall Meeting (AGU)*. San Francisco, CA. December 6-10, 2002. EOS, LBNL-51441 Abs.
- Oldenburg, Curt M., Daley, Paul F., Freifeld, Barry M., Hinds, Jennifer and Jordan, Preston D. 2002. Three-dimensional groundwater flow, aquifer response and treatment system monitoring at Site OU 1, former Fort Ord, California LBNL-49586.
- Oldenburg, Curtis M. and Lewicki, Jennifer L. 2003. Leakage and Seepage in the Near-Surface Environment: An Integrated Approach to Monitoring and Detection. *7th International conference on Greenhouse Gas Control Technologies (GHGT-7)*. Vancouver, Canada. September 5-9, 2004. LBNL-54283 Abs.
- Oldenburg, C.M. and Lewicki, J.L. 2004. Geologic CO₂ Storage Verification Monitoring: Preliminary Results for the Frio Pilot Test. *Third Annual Conference on Carbon Capture and Sequestration*. Alexandria, VA. May 2-6, 2004. LBNL-54512 Abs.
- Oldenburg, Curtis M., Lewicki, Jennifer L. and Hepple, Robert P. 2003. Near-surface monitoring strategies for geologic carbon dioxide storage verification, *LBNL*, Berkeley, CA LBNL-54089.

- Oldenburg, C. M., Lwicky, J. L. and Zhang, Yingqi. 2003. Simulating CO₂ Leakage and Seepage from Geologic Carbon Sequestration Sites: Implications for Near-Surface Monitoring. *American Geophysical Union(AGU) Fall Meeting 2003*. San Francisco, CA. December 8-13-2003. LBNL-53678 Abs.
- Oldenburg, C.M., McKone, T.E., Hepple, R.P. and Unger, A.J.A. 2002. Health risk assessment for leakage and seepage from geologic carbon sequestration sites: requirements and design of a coupled model. LBNL-51131.
- Oldenburg, C. M. and Pruess, K. 2000. Simulation of propagating fronts in geothermal reservoirs with the implicit Leonard total variation diminishing scheme. *Geothermics*, **29**, pp. 1-25, LBNL-42620.
- Oldenburg, C.M. and Pruess, K. 2000. Thermohaline convective mixing at a brine interface. Stanford, CA, LBNL-45131.
- Oldenburg, C.M., Pruess, Karsten and Benson, Sally M. 2001. Process modeling of CO₂ injection into natural gas reservoirs for carbon sequestration and enhanced gas recovery. *Energy and Fuels*, **15**, pp. 293-298, LBNL-45820.
- Oldenburg, C. M., Stevens, S. H. and Benson, S.M. 2003. Economic Feasibility of Carbon Sequestration with Enhanced Gas Recovery (CSEGR). *Energy*, LBNL-49762 Jart.
- Oldenburg, Curt M. , Unger, Andre A., Zhang, Yingqi and Lewicki, Jennifer L. 2004. CO₂ Capture Project - An Integrated, Collaborative Technology Development Project for Next Generation CO₂ Separation, Capture and Geologic Sequestration. *HSE Risk Assessment of Deep Geological Storage Sites*, LBNL, Berkeley, CA, pp. 32 LBNL-54411.
- Oldenburg, Curtis M. and Unger, André A. J. 2003. Transport and Dispersion Processes for CO₂ in the Unsaturated Zone and Surface Layer. *Second Annual Conference on Carbon Sequestration*. Alexandria, VA, LBNL-52158 Abs.
- Oldenburg, C. M. and Unger, A. J. A. 2003. On leakage and seepage from geologic carbon sequestration sites: unsaturated zone attenuation. *Vadose Zone Journal*, **2**(3), pp. 287-296, LBNL-51928.
- Oldenburg, C. M. and Unger, A. J. A. 2003. Coupled Subsurface-Surface Layer Gas Transport and Dispersion for Geologic Carbon Sequestration Seepage Simulation. *TOUGH Symposium 2003*. Berkeley, CA. May 12-14, 2003. LBNL-52477.
- Oldenburg, C. M. and Unger, A. J. A. 2003. Coupled Modeling Framework for CO₂ Leakage and Seepage Risk Assessment, *LBNL*, Berkeley LBNL-53009.
- Oldenburg, C.M., Unger, A.J.A., Hepple, R.P. and Jordan, P.D. 2002. On leakage and seepage from geological carbon sequestration sites, Berkeley, CA LBNL-51130.

- Oldenburg, Curtis M., Webb, S. W., Pruess, K. and Moridis, G. J. 2004. Mixing of stably stratified gases in subsurface reservoirs: A comparison of diffusion models. *Transport in Porous Media*, **54**(3), pp. 323-334, LBNL-51545.
- Oldenburg, Curtis M., Zhang, Yingqi, Lewicki, Jennifer L. and Jordan, Preston D. 2003. Preliminary Application of a Coupled Modeling Framework for CO₂ Leakage and Seepage at the Rio Vista Gas Field. *Health, Safety, and Environmental Risk Assessment for Leakage of CO₂ from Deep Geologic Storage Sites*, pp. 34 LBNL-54051.
- Ontoy, Yvette, Molling, Phil, Xu, T., Spycher, Nicholas, Parini, Mauro and Pruess, Karsten. 2003. Scaling of Hot Brine Injection Wells: Supplementing Field Studies with Reactive Transport Modeling. *TOUGH Symposium 2003*. Berkeley, CA. May 12-14, 2003. pp. 9, LBNL-52513.
- O'Sullivan, Michael J., Pruess, Karsten and Lippmann, Marcelo J. 2001. State-of-the-art of geothermal reservoir simulation. *Geothermics*, **30**(4), pp. 395-429, LBNL-44699.
- Palmisano, Anna and Hazen, Terry. 2003. Bioremediation of Metals and Radionuclides: What It Is and How It Works (2nd Edition) LBNL-42595.
- Pan, L. 2003. WinGridder - An interactive Grid Generator for TOUGH2. *Proceedings, TOUGH Symposium 2003*. Berkeley, CA. May 12-14, 2003. pp. 6, LBNL-52422.
- Pan, Lehua and Bodvarsson, Gudmundur S. 2001. Modeling transport in fractured porous media with the random-walk particle method: The transient activity range and the particle-transfer probability. *AGU Fall Meeting 2001*. San Francisco CA, LBNL-48861 Abs.
- Pan, Lehua and Bodvarsson, Gudmundur S. 2002. Modeling transport in fractured porous media with the random-walk particle method: The transient activity range and the particle-transfer probability. *Water Resources Research*, **38**(6), pp. 1080, LBNL-48042.
- Pan, Lehua, Hinds, Jennifer, Haukwa, Charles, Wu, Yu-Shu and Bodvarsson, Gudmundur. 2001. WinGridder - An interactive grid generator for TOUGH - A user's manual (Version 1.0) LBNL-42957.
- Pan, L. and Ho, C.K. 2000. Analysis Comparing Advective-Dispersive Transport Solution to Particle Tracking, ANL-NBS-HS-000001 REV00 LBID-2336.
- Pan, Lehua, Liu, Hui Hai, Cushey, Mark and Bodvarsson, Gudmundur. 2001. DCPT v1.0 - New particle tracker for modeling transport in dual-continuum - User's Manual LBNL-42958.
- Pan, L., Liu, H.H., Cushey, M. and Bodvarsson, G.S. 2000. *DCPT: A dual-continua random walk particle tracker for transport*, LBNL-46395.
- Pan, L., Wu, Y.S. and Zhang, K. 2002. Flow diversion and focusing in unsaturated fractured tuffs at Yucca Mountain, Nevada. *Vadose Zone Journal*, LBNL-49274.

- Park, S H, Refson, K and Sposito, G. 2001. Calculations of montmorillonite structure using density functional theory. *American Geophysical Union 2001 Fall Meeting*. San Francisco, CA, **82**, LBNL-49661 Abs.
- Park, S.H. and Sposito, G. 2002. Structure of water absorbed on a mica surface. *Physical Review Letters*, **89**, pp. 85501, LBNL-49660.
- Park, Sung-Ho, Refson, Keith and Sposito, Garrison. 2002. Density Functional Theory on the Structure of Montmorillonite. *American Chemical Society National Meeting*. Orlando, FL. April 7-11, 2002. LBNL-54385 Abs.
- Park, Sung-Ho and Sposito, G. 2000. Monte Carlo simulation of total radial distribution functions for interlayer water in Li-, Na- and K- Montmorillonite hydrates. *The Journal of Physical Chemistry B*, **104**(19), pp. 4642-4648, LBNL-45842.
- Park, Sung-Ho and Sposito, Garrison. 2001. Molecular dynamics simulations of methane hydrate structure and stability in montmorillonite interlayers. *The Journal of Physical Chemistry B*, LBNL-48578.
- Park, Sung-Ho and Sposito, Garrison. 2001. Monte Carlo simulations of methane hydrate structure and stability in montmorillonite interlayers. *The Journal of Physical Chemistry B*, LBNL-48579.
- Park, Sung-Ho and Sposito, Garrison. 2002. Monte Carlo simulations of hydration of mono- and divalent cation exchanged (SWy-1 and SAz-1) montmorillonite. *American Geophysical Union Meeting*. San Francisco, CA. December 6-10, 2002. EOS. Trans., **83**(47): pp. V22B-1229, LBNL-54388 Abs.
- Park, S.-H. and Sposito, G. 2003. Do Montmorillonite Surfaces Promote Methane Hydrate Formation?: Monte Carlo and Molecular Dynamics Simulations. *Journal of Physical Chemistry B*, **107**, pp. 2281-2290, LBNL-52712.
- Park, Sung-Ho and Sposito, Garrison. 2003. Molecular Structure of Water Absorbed on a Mica Surface. *American Geophysical Union Meeting*. San Francisco, CA. December 8-12, 2003. EOS, **84**(46): pp. B21B-0705, LBNL-54390 Abs.
- Park, S.-H., Sposito, G., Sutton, R. and Greathouse, J. 2002. Formation and stability of methane hydrates in clay interlayers LBNL-50312.
- Park, Sung-Ho, Sposito, Garrison, Sutton, Rebecca and Greathouse, Jeffery A. 2001. Density functional theory (DFT) calculations on the structures of 2:1 clay minerals LBNL-48577.
- Parra, Jorge O., Hackert, Chris L., Gorody, Anthony W. and Korneev, Valeri. 2002. Detection of guided waves between gas wells for reservoir characterization. *Geophysics*, **67**(1), pp. 38-49, LBNL-48523.

- Parsons, Brian, Swift, D.J.P. and Williams, K.H. 2003. Quaternary Facies Assemblages and Their Bounding Surfaces, Chasapeake Bay Mouth: An Approach to Mesoscale Stratigraphic Analysis. *Journal of Sedimentary Research*, **73**(5), pp. 672-690, LBNL-48605.
- Paton, Boris E., Baryakhtar, Victor G., Prister, Boris S. and Faybishenko, Boris. 2003. The Chernobyl Catastrophe in Ukraine: Causes of the Accident and Lessons Learned. *Environmental Science and Pollution Research*(Special Issue 1), LBNL-54151.
- Patzek, T; Silin, D; Barenblatt, G. 2001. Impact of rock micro- and macrostructure on the behavior of large waterfloods. *22nd Energy Information Agency Workshop*. Vienna, Austria LBNL: pp. 5, LBNL-48859.
- Patzek, T.W. and Silin, D.B. 2000. Use of INSAR in surveillance and control of a large field project. Edinburg, Scotland, UK, LBNL-48544.
- Patzek, T.W. and Silin, D.B. 2001. Shape factor and hydraulic conductance in noncircular capillaries. I. One-Phase Creeping Flow. *Journal of Colloid and Interface Science*, **236**(2), pp. 295-304, LBNL-48542.
- Patzek, T.W., Silin, D.B. and Barenblatt, G.I. 2001. Impact of rock micro- and macrostructure on the behavior of large waterfloods. *22nd Energy Information Agency Workshop*. Vienna, Austria. September 12, 2001. LBNL-48859.
- Patzek, T.W., Silin, D.B., Benson, S.M. and Barenblatt, G.I. 2003. On vertical diffusion of gases in a horizontal reservoir. *Transport in Porous Media*, **51**(2), pp. 141-156, LBNL-48909.
- Pellegrino, Giampaolo Q. and Miller, Norman L. 2001. TOPMODEL calibration and verification study in the Smith Basin, CA and technology transfer for Piracicaba Basin, Brazil LBID-2381.
- Perry, D. L., Firestone, M.K., Molnar, G.L., Kasztovszky, Zs., Gatti, R. and Wilde, P. 2002. Neutron-Induced Prompt Gamma Activation Analysis (PGAA) of Metals and Non-Metals in Ocean Floor Geothermal Vent-Generated Samples. *Journal of Analytical Atmospheric Spect.*, **17**, pp. 32, LBNL-48424.
- Perry, D.L., Gatti, R., Firestone, R.B., Molnar, G.L., Revay, Zs. and Kasztovszky, Zs. 2000. Application of prompt gamma activation analysis (PGAA) to inorganic photochromic host materials. San Francisco, LBNL-45027 Abs.
- Perry, D.L., Gatti, R., Firestone, R.B., Wilde, P., Molnar, G.L., Revay, Zs. and Kasztovszky, Zs. 2000. Application of prompt gamma activation analysis (PGAA) to oceanic floor geothermal vent-produced metal sulfides. San Francisco, LBNL-45029 Abs.
- Persoff, Peter. 2000. Estimating fracture closure under hydrothermal conditions, LBNL-46026.

- Pesenson, Igor. 2003. Implementation and evaluation of the Heffter Method to calculate the height of the planetary boundary layer above a southern Great Plains site, *LBNL*, Berkeley, pp. 12 LBNL-54292.
- Peterson, J.E. 2000. Development of petrophysical relationships necessary to estimate moisture migration with time-lapse tomographic radar data, LBNL-45004.
- Peterson, J.E. 2000. Acoustic emission/seismic wave monitoring baseline data, LBNL-45127.
- Peterson, J.E. 2000. Pre-heating ground penetrating radar baseline data, LBNL-45128.
- Peterson, J.E. 2000. Radar imaging at the drift scale heater test., LBNL-45129.
- Pfiffner, Susan M., Palumbo, Anthony V., Phelps, Tommy J., Beauchamp, John J., Ringelberg, David B., Pinkart, Holly C., White, David C. and Hazen, Terry C. 2003. Microbial monitoring as a measure of success for in-situ TCE bioremediation. *FEMS Microbiology Ecology*, LBNL-45232.
- Pham, Minh, Klein, Christopher, Sanyal, Subir, Xu, Tianfu and Pruess, Karsten. 2001. Reducing cost and environmental impact of geothermal power through modeling of chemical processes in the reservoir. Stanford, CA, LBNL-47644.
- Piotrowski, Alexander M., Lee, Der-Chuen, Christensen, John N., Burton, Kevin W., Halliday, Alex N., Hein, James R. and Gunther, Detlef. 2001. Changes in erosion and ocean circulation recorded in the Hf isotopic compositions of North Atlantic and Indian Ocean ferromanganese crusts. *Earth and Planetary Science Letters*, **181**(3), pp. 315-325, LBNL-48589.
- Plaza, G., Ulfing, K., Hazen, T. and Brigmon, R.L. 2001. Use of Molecular Techniques in Bioremediation. *Acta Microbiologica Polonica*, **50**(3-4), pp. 205-218, LBNL-49587.
- Podgorney, R.R., Wood, T.R., Faybishenko, B. and Staops, T.M. 2000. Spatial and tempered instabilities in water flow through variably saturated basalt on a one-meter scale. Faybishenko, B., Witherspoon, P.A. and Benson, S., Eds. *Dynamics of Fluids in Fractured Rocks: Concepts and Recent Advances*. Geophysical Monograph 122, Washington D.C., pp. 129-146, LBNL-46551 BK.
- Podgorney, R.R., Wood, T.R., Faybishenko, B. and Staops, T.M. 2000. Spatial and tempered instabilities in water flow through variably saturated basalt on a one-meter scale. *Dynamics of Fluids in Fractured Rocks: Concepts and Recent Advances* AGU, LBNL-46551.
- Pratt, Mary (ed.). 2000. DOE/NABIR PI Workshop. Reston, Virginia, LBNL-44645 Abs.
- Pratt, M.(editor). 2001. DOE-NABIR PI Workshop. Warrenton, VI, LBNL-47386 Abs.

- Pride, Steven R. 2003. The Electroseismic Wave Theory of Frenkel. *Journal of Engineering Mechanics*, LBNL-54075.
- Pride, S. R., Berryman, J. G. and Harris, J. M. 2003. Seismic attenuation due to wave-induced flow. *Journal of Geophysical Research*, LBNL-53898.
- Pride, Steven R., Harris, Jerry M., Johnson, David L., Mateeva, Albena, Nihei, Kurt T., Nowack, Robert L., Rector, James W., Spetzler, Hartmut, Wu, Rushan, Yamamoto, Tokuo, Berryman, James G and Fehler, Michael. 2003. Permeability dependence of seismic amplitudes. *The Leading Edge*, **22**(7), pp. 518-525, LBNL-53683.
- Pride, Steven R., Harris, Jerry M., Johnson, David L., Mateeva, Albena, Nihei, Kurt T., Nowack, Robert L., Rector, James W., Spetzler, Hartmut, Wu, Rushan, Yamamoto, Tokuo, Berryman, James G and Fehler, Michael. 2003. Erratum: Acquisition/Processing-- Permeability dependence of seismic amplitudes. *The Leading Edge*, **22**(7), pp. 698, LBNL-53735.
- Pride, Steven R., Moreau, Frédérique and Gavrilenko, Pierre. 2004. Mechanical and electrical response due to fluid-pressure equilibration following an earthquake. *Journal of Geophysical Research - Solid Earth*, **109**, pp. doi: 10.1029.2003JB002690, LBNL-54569.
- Pruess, K. 2000. Multiphase flow in fractured rocks - some lessons learned from mathematical models. *Dynamics of Fluids in Fractured Rocks*. Washington D.C. Geophysical Monograph, **122**: pp. 225-234, LBNL-42372.
- Pruess, Karsten. 2000. Multiphase fluid flow and heat transfer at Hanford single-shell tanks - a progress report on modeling studies LBNL-45283.
- Pruess, K. 2000. Treatment of two-phase flow in repository performance assessment at Yucca Mountain. Reims, France, LBNL-46204.
- Pruess, Karsten. 2001. Studies of geothermal reservoir dynamics. San Diego, CA, LBNL-48653.
- Pruess, Karsten. 2001. A composite medium approximation for moisture tension-dependent anisotropy in unsaturated layered sediments. San Francisco, CA, LBNL-48873 Abs.
- Pruess, Karsten. 2002. Numerical simulation of multiphase tracer transport in fractured geothermal reservoirs. *Geothermics*, **31**, pp. 475-499, LBNL-48657.
- Pruess, Karsten. 2002. A composite medium approximation for unsaturated flow in layered sediments, LBNL-49609.
- Pruess, K. 2002. Mathematical modeling of fluid flow and heat transfer in geothermal systems - An introduction in five lectures, Berkley, CA LBNL-51295.

- Pruess, Karsten. 2003. Numerical simulation of CO₂ leakage from a geologic disposal reservoir including transitions from super- to sub-critical conditions, and boiling of liquid of CO₂. *TOUGH Symposium 2003*. Berkeley, CA. May 12-14, 2003. LBNL: pp. 15, LBNL-52423.
- Pruess, K. 2003. The Tough Codes - A Family of Simulation Tools for Multiphase Flow and Transport Processes in Permeable Media. *Vadose Zone Journal*, LBNL-53630.
- Pruess, Karsten. 2003. Numerical Simulations of Fluid Leakage from a Geologic Disposal Reservoir for CO₂. *Dynamics of Fluids in Fractured Rock*. Berkeley, CA. February 10-12, 2004. LBNL-54029 Ext. Abs.
- Pruess, Karsten and Battistelli, Alfredo. 2003. TMVOC, A Simulator for Multiple Volatile Organic Ch. *TOUGH Symposium 2003*. Berkeley, CA. May 12-14, 2003. pp. 8, LBNL-52400.
- Pruess, K., Bielinski, Andreas, Ennis-King, Jonathan, Fabriol, Robert, Le Gallo, Yann, Garcia, Julio, Jessen, Kristian, Kovscek, Tony, Law, David H.-S., Lichtner, Peter, Oldenburg, Curtis M., Pawar, Rajesh, Rutqvist, Jonny, Steefel, Carl, Travis, Bryan, Tsang, Chin Fu, White, Stephen and Xu, Tianfu. 2002. Code intercomparison builds confidence in numerical models for geologic disposal of CO₂. *Sixth International Conference on Greenhouse Gas Control Technologies (GHGT-6)*. Kyoto, Japan. October 1-4. 2002. LBNL-51200 Abs.
- Pruess, K. and Garcia, J. 2000. A systematic approach to local grid refinement in geothermal reservoir simulation. *World Geothermal Congress*. Beppu City, Kyushu, and Morioka City, Japan. May 28-June 10, 2000. LBNL-44103.
- Pruess, K. and Garcia, Julio. 2002. Multiphase Flow Dynamics During CO₂ Disposal into Saline Aquifers. *Environmental Geology*, **42**(2-3), pp. 282-295, LBNL-46793.
- Pruess, Karsten and Garcia, Julio. 2002. Solutions of test problems for disposal of CO₂ in saline aquifers, *LBNL* LBNL-51812.
- Pruess, Karsten, Garcia, Julio, Kovscek, Tony, Oldenburg, Curt, Rutqvist, Jonny, Steefel, Carl and Xu, Tianfu. 2002. Intercomparison of numerical simulation codes for geologic disposal of CO₂, *LBNL*, pp. 1-86 LBNL-51813.
- Pruess, Karsten, Garcia, Julio, Kovscek, Tony, Oldenburg, Curt, Rutqvist, Jonny, Steefel, Carl and Xu, Tianfu. 2003. Code intercomparison builds confidence in numerical simulation models for geologic disposal of CO₂. *Energy Conversion and Management*, LBNL-52211.
- Pruess, Karsten, Lichtner, Peter, Steefel, Carl, White, Mark and Yabusaki, Steve. 2000. Simulation studies of unsaturated flow at Hanford tanks. *American Geophysical Union Fall Meeting*. San Francisco, CA. December 15-19, 2000. LBNL-47038 Abs.

- Pruess, K., Oldenburg, C.M., Moridis, G.J. and Webb, S.W. 2001. Vertical mixing of CO₂ and CH₄ with gravity effects. San Francisco, CA, LBNL-48922 Abs.
- Pruess, K., O'Sullivan, M.J. and Kennedy, B.M. 2000. Modeling of phase-partitioning tracers in fractured reservoirs. *Proceedings, 25th Workshop on Geothermal Reservoir Engineering*. Stanford, CA. January 24-26, 2000. Stanford Geothermal Program Report, **SGP-TR-165**: pp. 167-173, LBNL-44802.
- Pruess, Karsten, Tsang, Chin-Fu, Law, David and Oldenburg, Curt. 2001. Intercomparison of simulation models for CO₂ disposal in underground storage reservoirs LBNL-47353.
- Pruess, K. and Wang, J. S. Y. 2001. Numerical modeling of isothermal and nonisothermal flow in unsaturated fractured rock: A review, in flow and transport through unsaturated fractured rock. Evans, D.D., Nicholson, T. and Rasmussen, T.C., Eds. *Flow & Transport Through Unsaturated Fractured Rock. Geophysical Monograph Series - 2nd Edition*, Geophysical Monograph. American Geophysical Union, Washington D.C., pp. 19-32, LBNL-50314.
- Pruess, K. and Wang, J.S.Y. 2000. Numerical modeling of isothermal and nonisothermal flow in unsaturated fractured rock: A review. Daniel D. Evans, Thomas J. Nicholson, Todd C. Rasmussen. *Flow & Transport Through Unsaturated Fractured Rock. Geophysical Monograph Series - 2nd Edition*. American Geophysical Union, LBNL-50314.
- Pruess, K, Xu, Tianfu, Apps, John and Garcia, Julio. 2001. Numerical modeling of aquifer disposal of CO₂. *Society of Petroleum Engineers*. San Antonio, TX. February 26-28, 2001. SPE Journal: pp. 49-60, LBNL-47135.
- Pruess, K., Yabusaki, Steve, Steefel, Carl and Lichtner, Peter. 2002. Fluid flow, heat transfer, and solute transport at nuclear waste storage tanks in the Hanford vadose zone. *Vadose Zone Journal*, **1**(1-2), pp. 68-88, LBNL-49215.
- Pruess, K; and Battistelli, A. 2002. TMVOC, a numerical simulator for three-phase non-isothermal flows of multicomponent hydrocarbon mixtures in saturated-unsaturated heterogeneous media, *LBNL*, Berkeley, pp. 197 LBNL-49375.
- Quinn, N.W.T. 2000. An integrated modeling system for environmental impact analysis of climate variability and extreme weather events in the San Joaquin Basin, California. *3rd International Symposium on Environmental Software Systems (ISESS'2000)*. Zell am See, Austria. May 30-June 3, 2000. LBNL-46511.
- Quinn, N.W.T. 2000. An algal-bacterial treatment system to reduce selenium loads in agricultural drainage, LBNL-44923.
- Quinn, N.W.T. 2000. San joaquin valley drainage implementation program. groundwater management technical committee, LBNL-44927.

- Quinn, N.W.T. 2000. San joaquin valley drainage implementation program. river discharge technical committee., LBNL-44929.
- Quinn, N.W.T. 2000. Presentation to US state dept. / Egyptian delegation on water resources, LBNL-44932.
- Quinn, N.W.T. 2000. Design and use of graphic interfaces, LBNL-44933.
- Quinn, Nigel W.T. 2001. Real-time water quality management in the San Joaquin River. *ASCE/USCID Joint Meeting*. San Luis Obispo, CA. July 10-13,2002. LBNL-44971 Abs.
- Quinn, N.W.T. 2003. Concept paper for real-time temperature and water quality management for San Joaquin river restoration. *White Paper, US Bureau of Reclamation*, Sacramento, CA, pp. 23 LBNL-53391.
- Quinn, N.W.T., Bashford, K.E., Miller, N.L., Brekke, L.D., Hidalgo, H., Raju, P. and Dracup, J.A. 2002. Model integration for assessing future hydroclimate impacts on water resources, agricultural economic sustainability and environmental quality. *IEMSS 2002 - Integrated Assessment and Decision Support*. Lugano, Switzerland. June 24-27, 2002. LBNL-50238.
- Quinn, Nigel W.T., Brekke, L.D., Miller, Norman L., Heinzer, T. and Dracup, J.A. 2002. Model integration for assessing future hydroclimate impacts on water resources, agricultural production and environmental quality in the San Joaquin Basin, California. *Journal of Environmental Modeling and Software*, LBNL-51708.
- Quinn, N.W.T., Chen, C.W. and Stringfellow, W. 2003. A decision support system for real-time management of dissolved oxygen in the Stockton deep water ship channel. *Environmental Information and Decision Support. International Symposium on Environmental Software Systems (ISESS)*. Semmering, Austria. May 28-June 2, 2003. LBNL-53394.
- Quinn, Nigel W.T. and Eacock, Michael C.S. 2002. Real-time water quality modeling and management in the San Joaquin River. *US Committee on Irrigation and Drainage*. San Luis Obispo, CA. July 10-12, 2002. LBNL-51167.
- Quinn, Nigel W.T. and Hanna, Mark W. 2002. Real-time management of seasonal wetland drainage as an alternative for compliance with salinity TMDL objectives in California's Grasslands Basin. *Helping Irrigated Agriculture Adjust to TMDL*. Sacramento, CA. October 23-25, 2002. LBNL-51168.
- Quinn, N.W.T. and Hanna, W.M. 2001. A decision support system for adaptive real-time management of seasonal wetlands in California. Swayne, David A., Denzer, Ralf and Schimak, Gerald, Eds. *Environmental Information and Decision Support. Environmental Information and Indicators*. Environmental Software Systems, LBNL-46512 Bk.

- Quinn, N.W.T. and Hanna, W.M. 2003. A decision support system for adaptive real-time management of seasonal wetlands in California. *Journal of Environmental Modelling and Software*, **18**(6), pp. 503-511, LBNL-49206.
- Quinn, N. W. T., Jacquemin, C.Y. and Heinzer, T. 2002. WESTSIM: A GIS-based Application of the Integrated GW Surface Water Model (IGSM) to the Western San Joaquin Basin for Conjunctive Use Planning and Drainage Prediction. *23rd Biennial Groundwater Conference*. Sacramento, CA, LBNL-50315.
- Quinn, N.W.T., Lundquist, T. , Green, B., Oswald, W., Leighton, T. and Zarate, M. 2000. An algal-bacterial treatment system to reduce selenium loads in agricultural drainage. *California Agriculture*, LBNL-42323.
- Quinn, N.W.T., Lundquist, T.J., Green, F.B., Zarate, M.A., Oswald, W.J. and Leighton, T. 2000. Algal-bacterial treatment facility removes selenium from drainage water. *California Agriculture*. University of California, Division of Agriculture and Natural Resources, LBNL-45238.
- Quinn, N.W.T., Lundquist, T.J., Green, F.B., Zarate, M.A., Oswald, W.J. and Leighton, T. 2000. Algal-bacterial treatment facility removes selenium from drainage water. *California Agriculture*, **54**(6), pp. 50-56, LBNL-50318.
- Quinn, Nigel W.T., Miller, Norman L., Dracup, John A. and Grober, Leslie F. 2001. An integrated modeling system for environmental impact analysis of climate variability and extreme weather events in the San Joaquin Basin, California. *Advances in Environment Research*, **5**(4), pp. 309-317, LBNL-46511 Jnl.
- Radnedge, Lyndsay, Agron, Peter G., Hill, Karen K., Jackson, Paul J., Tickner, Lawrence O., Neim, Paul and Andersen, Gary L. 2003. Genome differences that distinguish bacillus anthracis from bacillus cereus and bacillus thuringiensis. *Applied and Environmental Microbiology*, **69**(5), pp. 2755-2764, LBNL-52363.
- Ragot, F., Ivanov, V., Wery, J., Garcia, A., Perry, D. L., Ouvrard, jGJ. and Faulques, E. 2002. Spectroscopy of a Eu(III)-Imidazole Complex, *Synthetic Metals*., **120**(773), LBNL-50319.
- Rebscher, D., May, F. and Oldenburg, C.M. 2004. CO₂ Injection in the Altmark Natural Gas Field, Germany: Simulations of Water Injection to Delay CO₂ Breakthrough. *Third Annual Conference on Carbon Capture and Sequestration*. Alexandria, VA. May 2-6, 2004. LBNL-54513 Abs.
- Rector III, J.W., Dong, Q. and Patzek, T.W. 2000. Passive characterization of hydrofracture properties using signals from hydraulic pumps. *Journal of Petroleum Science and Engineering*, **27**(1-2), pp. 49-58, LBNL-50317.

- Rector, J.W. 2000. Passive characterization of hydrofractures using signal from hydraulic pumps, LBNL-44996.
- Rector, James W., Zhng, Linbin and Hoversten, G. Michael. 2003. Optimized Coefficient Finite Difference Scheme for the Wave Equation. *SEG 2002*. Salt Lake City, UT. October 6-11, 2002. LBNL-52514 Pstr.
- Refson, Keith, Park, Sung-Ho and Sposito, Garrison. 2003. Ab Initio Computational Crystallography of 2:1 Clay Minerals: 1. Pyrophyllite-1Tc. *Journal of Physical Chemistry B*, **107**(48), pp. 13376-13383, LBNL-54386.
- Richter, Frank M., Davis, Andrew M., DePaolo, Donald J. and Watson, E. Bruce. 2003. Isotope fractionation by chemical diffusion between molten basalt and rhyolite. *Geochimica et Cosmochimica Acta*, **67**(20), pp. 3905-3923, LBNL-54022.
- Riley, W.J., Cohen, Hubal E.A. and McKone, T.E. 2003. Linking dermal modeling and loading data to predict long-term doses from intermittent dermal contact, LBNL-53017 Abs.
- Riley, W.J., Cooley, H.S., He, Y. and Torn, M.S. 2003. Coupling MM5 with ISOLSM: Development, testing, and application, LBNL-53018 Abs.
- Riley, W.J. and Matson, P.A. 2000. NLOSS: A mechanistic model of denitrified N₂O and N₂ evolution from soil. *Soil Science*, **165**(3), pp. 237-249, LBNL-48499.
- Riley, W.J. and McKone, T.E. 2002. Indoor particulate matter of outdoor origin: The importance of size dependent removal mechanisms. *Environmental Science & Technology*, **36**(8), pp. 200 (Correction, Addition) 1868, LBNL-47437.
- Riley, W.J., McKone, T.E. and Hubal-Cohen, E. 2003. Exposure and dose models for intermittent dermal contact. *Risk Analysis*, LBNL-53020.
- Riley, W. J., McKone, T. E. and Hubal-Cohen, E. 2004. Estimating Contaminant Dose for Intermittent Dermal Contact: Model Development, Testing, and Application. *Risk Analysis*, **24**(1), pp. 73-84, LBNL-54207.
- Riley, W.J., McKone, T.E. and Nazaroff, W.W. 2002. Estimating Indoor Exposures to Particles of Outdoor Origin: Development of a Modeling Framework. *International Society of Exposure Analysis*. Monterey, CA, LBNL-50331.
- Riley, W.J., Noone, D.C., Torn, M.S., Berry, J.A. and Still, C.J. 2001. Integrating and testing a mechanistic model of H₂¹⁸O and CO¹⁸O ecosystem fluxes in a coupled land surface and global climate model. *American Geophysical Union*, LBNL-50330.
- Riley, W.J. and Ortiz-Monasterio, I. 2001. Nitrogen leaching and soil nitrate, nitrite, and ammonium levels under differing fertilizer management in an irrigated wheat system in northern Mexico. *Nutrient Cycling in Agroecosystems*, **61**(3), pp. 223-236, LBNL-48495.

- Riley, W.J., Still, C.J., Helliker, B.R., Ribas-Carbo, M., Burba, G., Verma, S., Torn, M.S. and Berry, J.A. 2002. Simulating ^{18}O of Water and Carbon Dioxide at a Tallgrass Prairie in Oklahoma. *Ecological Society of America, 86th Annual Meeting*. Madison, WI. August 5-10, 2002. LBNL-50324.
- Riley, W.J., Still, C.J., Helliker, B.R., Ribas-Carbo, M., Verma, S. and Berry, J. A. 2003. ^{18}O composition of CO_2 and H_2O ecosystem pools and fluxes in a tallgrass prairie. *Global Change Biology*, **9**(11), pp. 1567-1581, LBNL-53019.
- Riley, W.J., Still, C.J., Helliker, B.R., Torn, M.S. and Berry, J.A. 2002. Modeling the ^{18}O composition of CO_2 as a tracer of soil and plant carbon fluxes: Integration into a land surface model for coupling with GCMs. *Global Change Open Science Conference*,. Amsterdam, the Netherlands. July 10-13, 2002. LBNL-50329.
- Riley, W.J., Still, C.J., Torn, M.S. and Berry, J.A. 2002. A mechanistic model of (H_2 ^{18}O and C^{18}OO fluxes between ecosystems and the atmosphere: Model description and sensitivity analyses. *Global Biogeochemical Cycles*, **16**(4), pp. 1095, doi: 10.1029/1202GB001878, LBNL-51234.
- Riley, William J., Torn, Margaret S., Fischer, Marc L., Still, Chris J. and Berry, Joe A. 2002. Impacts of drought stress on C^{18}OO ecosystem fluxes in an agricultural field: Measurements and modeling. *Fall 2002 AGU Conference*. San Francisco CA. December 5 - 10, 2002. LBNL-51785 Abs.
- Rillig, M.C. and Wright, S.F. 2001. Large contribution of arbuscular mycorrhizal fungi to soil carbon pools in tropical forest soils. *Planet and Soil*, **233**(2), pp. 167-177, LBNL-48539.
- Rilling, M.C., Wright, S.F., Nichols, K.A., Schmidt, W.F. and Torn, M.S. 2001. Unusually large contribution of arbuscular mycorrhizal fungi to soil organic matter pools in tropical forest soils. *Plant and Soil*, **233**(2), pp. 167-177, LBNL-48539.
- Roberts, Peter M., Esipov, Igor B. and Majer, Ernest L. 2003. Elastic Wave Stimulation of Oil Reservoirs: Promising EOR Technology? *The Leading Edge*, **22**(5), pp. 448-453, LBNL-52234.
- Roberts, Peter M., Kostrove, Sergey A., Wooden, William O., Majer, Ernest L. and Daley, Thomas M. 2002. Laboratory and field observations of stress-wave induced changes in oil flow behavior. *SEG Annual Meeting*. Austin, TX. September 10-14, 2002. LBNL-50633.
- Roberts, Peter M., Majer, Ernest L. , Lo, Wei-Cheng , Sposito, Garrison and Daley, Thomas M. 2002. An Integrated Approach to Seismic Stimulation of Oil Reservoirs: Laboratory, Field and Theoretical Results from DOE/Industry Collaborations. *16th International Symposium on Nonlinear Acoustics*. Moscow, Russia. August 19-23, 2002. LBNL-53870 Ext. Abs.

- Rodriguez-Martinez, R. A., Hazen, T. C., Torok, T. and Clark, M. B. 2000. Microbial community studies of differently treated explosive contaminated soils. *Abstracts of the General Meeting of the American Society for Microbiology*. Los Angeles, California, **100**: pp. 495, LBNL-50332.
- Rubin, Yoram, Chen, Jinsong, Hou, Zhangshuan, Kowalsky, Mike and Hubbard, Susan. 2003. Bayes, Zadeh and Shannon, and the Development of a Structured Approach to the Hydrogeophysical Data Fusion Problem. *EGS-AGU-EUG Joint Invited Assembly 2003*. Nice, France. April 6-11, 2003. European Geophysical Society(5, 02403), LBNL-52105 Abs.
- Rubin, Yoram, Chen, Jinsong, Hubbard, Susan, Kowalsky, Mike and Woodbury, Al. 2002. A structured approach to Bayesian data fusion. *American Geophysical Union Fall Meeting*. San Francisco, CA. December 5-10, 2002. EOS Transactions, **83**(47), LBNL-51446 Abs.
- Rubin, Yoram, Hubbard, Susan, S., Wilson, Amy and Cushey, Mark, A. 2000. Aquifer characterization. Delleur, Jacques W. *The Handbook of Groundwater Engineering*. CRC Press, LBNL-46471.
- Rubin, Yoram, Kowalsky, M., Lunt, I., Hou, Z. and Hubbard, S. 2003. Inverse modeling in the vadose zone based on GPR-monitored flow transients. *American Geophysical Union(AGU) Fall Meeting 2003*. San Francisco, CA. December 8-13, 2003. LBNL-53740 Abs.
- Rubin, Yoram N., Grote, Katharine and Hubbard, Susan. 2003. On the combined use of surface and airborne measurements for basin scale assessment. *IUGG 2003*. Sapporo, Japan. July 4-10, 2003. LBNL-52844 Abs.
- Russell, Lynn M., Maria, Steven F. and Myneni, Satish C. B. 2002. Mapping organic coatings on atmospheric particles. *Geophysical Research Letters*, **29**(16), pp. 26-21--26-24; 10.1029/2002GL014874, LBNL-54112.
- Rutqvist, J. 2000. Uncertainty in the maximum principal stress estimated from hydraulic fracturing measurements due to the presence of the induced fracture, LBNL-44902.
- Rutqvist, J. 2000. The ROCMAS model for coupled processes in unsaturated media: application to laboratory experiments and the Kamaishi field test, LBNL-44906.
- Rutqvist, J. 2000. Uncertainty in estimates of maximum principal stress from hydraulic fracturing due to the presence of the induced fracture, LBNL-46135.
- Rutqvist, J. 2000. Cyclic hydraulic jacking to determine virgin stress normal to a fracture, LBNL-46154.

- Rutqvist, J. 2000. Hydraulic pulse testing of single joints in porous and deformable rocks, LBNL-46155.
- Rutqvist, J. 2000. Experimental investigation and mathematical simulation of a borehole injection test in deformable rocks, LBNL-46157.
- Rutqvist, J., Borgesson, L., Chijimatsu, M., Kobayashi, A., Jing, L., Nguyen, T.S., Noorishad, J. and Tsang, C.-F. 2001. Thermohydromechanics of partially saturated geological media: Governing equations and formulation of four finite element models. *International Journal of Rock Mechanics and Mining Sciences*, **38**, pp. 105-127, LBNL-45502.
- Rutqvist, J., Borgesson, L., Chijimatsu, M., Nguyen, T.S., Jing, L., Noorishad, J. and Tsang, C.F. 2001. Coupled thermo-hydro-mechanical analysis of a heater test in fractured rock and bentonite at Kamaishi Mine -- Comparison of field results to predictions of four finite element codes. *International Journal of Rock Mechanics and Mining Sciences*, **38**, pp. 129-142, LBNL-45503.
- Rutqvist, J., Rejeb, A. , Tijani, M. and Tsang, C.-F. 2003. Analyses Of Coupled Hydrological-Mechanical Effects During Drilling Of The Febex Tunnel At Grimsel. *GEOPROC 2003*. Stockholm, Sweden. October 13-15, 2003. LBNL-53752.
- Rutqvist, J. and Stephansson, O. 2003. The role of hydromechanical coupling in fractured rock engineering. *Hydrogeology Journal*, **11**, pp. 7-40, LBNL-52224.
- Rutqvist, Johnny, Todesco, Micol and Tsang, Chin-Fu. 2003. Application of a Model for Coupled Multiphase Fluid Flow, Heat Transport, and Mechanical Deformation to Surface Deformations Associated with Volcanic Activities. *American Geophysical Union(AGU) Fall Meeting 2003*. San Francisco, CA. December 8-13, 2003. LBNL-53751 Abs.
- Rutqvist, J. and Tsang, C.-F. 2002. A study of caprock hydromechanical changes associated with CO₂ injection into a brine formation. *Environmental Geology*, **42**(2-3), pp. 296-305, LBNL-48145.
- Rutqvist, J. and Tsang, C.-F. 2001. Analysis of thermal-hydrologic-mechanical behavior near an emplacement drift at Yucca Mountain, LBNL-48688.
- Rutqvist, J. and Tsang, C.-F. 2001. Modeling of multi-phase fluid flow, heat transfer and rock deformations during CO₂ injection in deep aquifers. *2001 American Association of Petroleum Geologists Annual Convention*. Denver, CO. June 3-6, 2001. LBNL-48146 Abs.
- Rutqvist, J. and Tsang, C-F. 2003. Analysis of thermo-hydro-mechanical conditions near and emplacement drift at Yucca Mountain. *Journal of Contaminant Hydrology*, **62-3**(Special Issue SI), pp. 637-652, LBNL-49951.

- Rutqvist, J. and Tsang, C-F. 2003. A Fully Coupled Three-Dimensional Thm Analysis Of The Febex In Situ Test With The Rocmas Code: Prediction Of Thm Behavior In A Bentonite Barrier. *GEOPROC 2003*. Stockholm, Sweden. October 13-15, 2003. LBNL-53682.
- Rutqvist, Jonny and Tsang, Chin-Fu. 2003. Coupled-process analysis with TOUGH-FLAC, LBNL-53871 Abs.
- Rutqvist, J., Tsang, C.-F. and Stephansson, O. 2000. Uncertainty in the maximum principal stress estimated from hydraulic fracturing measurements due to the presence of the induced fracture. *International Journal of Rock Mechanics and Mining Sciences*, **37**(1-2), pp. 107-120, LBNL-43953.
- Rutqvist, J., Tsang, C-F. and Tsang, Y. 2003. Analysis of Stress- and Moisture-Induced Changes in Fractured Rock Permeability at the Yucca Mountain Drift Scale Test. *GEOPROC International Conference on 'Coupled T-H-M-C Processes in Geosystems'*. Stockholm, Swededn. October 13-15, 2003. LBNL-51955.
- Rutqvist, J., Wu, Y.-S., Tsang, C.-F. and Bodvarsson, G. 2001. Coupling of thermal, hydrologic, and mechanical codes for analysis of multiphase fluid flow, heat transfer, and deformation in fractured porous rock, LBNL-48686.
- Rutqvist, J., Wu, Y-S., Tsang, C-F. and Bodvarsson, G. 2002. A modeling approach for analysis of coupled multiphase fluid flow, heat transfer, and deformation in fractured porous rock. *Int. Journal of Rock Mechanics and Mining Sciences*, **39**(4), pp. 429-442, LBNL-50138.
- Saar, M.O. and Magna, M. 2004. Depth Dependence of Permeability in the Oregon Cascades Inferred from Hydrogeologic, Thermal, Seismic, and Magmatic Modeling Constraints. *Journal of Geophysical Research*, LBNL-54461.
- Saar, Martin O. and Manga, Michael. 2003. Seismicity induced by seasonal groundwater recharge at Mt. Hood, Oregon. *Earth and Planetary Science Letter*, **214**(3-4), pp. 605-618, LBNL-53930.
- Salve, R. 2000. Variations in soil moisture content in a rangeland catchment. *Journal of Range Management*, LBNL-44901.
- Salve, R. 2002. An automated tunnel evaporation measurement system for confined spaces. *Hydrological Processes*, **16**, pp. 1101-1109, LBNL-48157.
- Salve, R. 2003. A passive-discrete water sampler for montoring seepage. *Journal of Contaminant Hydrology*, LBNL-51203.
- Salve, R. and Allen-Diaz, B. 2001. Variations in flow in a rangeland catchment. *Journal of Range Management*, **54**, pp. 44-51, LBNL-50333.

- Salve, Rohit, Doughty, Christine and Wang, J. S. Y. 2002. Measuring and modeling flow in welded fractured tuffs. *Binding the gap between measurement and modeling in heterogenous media*. Berkeley, CA. March 25-28, 2002. LBNL-51205 Abs.
- Salve, Rohit, Hudson, David and Cook, Paul. 2001. Investigation of flow along a vertical fault: Field techniques. *AGU Fall 2001*. San Francisco, CA, LBNL-51204 Abs.
- Salve, R., Liu, H.-H., Hu, Q., Hudson, David, Cook, P. and Czarnomski, A. 2003. Unsaturated Flow and Transport through A Fault Embedded in Fractured Welded Tuff. *Water Resources Research*, LBNL-53632.
- Salve, R., Liu, H.-H., Wang, J. S. Y. and Hudson, David. 2003. Development of a Wet Plume Following Liquid Release Along a Fault, pp. 43, LBNL-52711.
- Salve, Rohit and Oldenburg, Curtis M. 2001. Water flow within a fault in altered nonwelded tuff. *Water Resources Research*, **37**(12), pp. 3043-3056, LBNL-45844.
- Salve, Rohit, Oldenburg, Curtis M. and Wang, Joseph S. 2003. In Situ Flow Experiments in Nonwelded Tuff: Conceptual Models and Implications for the Flow in the PTn. *Journal of Contaminant Hydrology*, **62-63**, pp. 269-286, LBNL-48869.
- Salve, Rohit, Oldenburg, Curtis M. and Wang, Joseph S. 2002. The interactions between faults and the matrix in paintbrush group nonwelded tuff at Yucca Mountain. *The Geological Society of America 2002 Denver Annual Meeting*. Denver, CO USA, LBNL-51086 Abs.
- Salve, R., Oldenburg, C.M. and Wang, J.S.Y. 2001. Conceptual model of flow for liquid-release experiments in the PTn. Las Vegas, NV, LBNL-47072.
- Salve, R. and Tokunaga, Tetsu K. 2000. Flow process in a rangeland catchment in California. *Journal of Range Management*, **53**(5), pp. 489-498, LBNL-44899.
- Salve, Rohit and Tokunaga, T.K. 2002. Seepage Response along an alluvial valley in a semi-arid catchment in north-central California. *Hydrological Processes*, **16**(1), pp. 65-86, LBNL-45845.
- Salve, R., Wang, J. S. Y. and Doughty, C. 2002. Liquid-release tests in unsaturated fractured welded tuffs: I. Field investigations. *Journal of Hydrology*, **256**(1-2), pp. 60-79, LBNL-44411.
- Salve, R., Wang, J. S. Y. and Doughty, C. 2002. Liquid flow in unsaturated fractured welded tuffs: II Numerical Modeling. *Journal of Hydrology*, **256**, pp. 60-79, LBNL-50334.
- Salve, R. T., Wang, J.S.Y. and Tokunaga, T.K. 2000. A probe for measuring wetting front migration in rocks. *Water Resources Research*, **36**, pp. 1359-1367, LBNL-43203.

- Samper, Javier, Guoxiang, Zhang and Navarro, Vicente. 2003. Modeling hydraulic response of boom clay under thermal impacts. *10th International High-Level Radioactive Waste Management Conference*. Las Vegas, NV. March 30-April 3, 2003. LBNL-51565.
- Samper, Javier, Zhang, Guoxiang and Navarro, Vincente. 2002. Modeling hydraulic response of boom clay under thermal impacts. *10th International High-Level Radioactive Waste Management Conference*. Las Vegas, NV. March 30-April 3, 2003. LBNL-51565 Abs.
- Samper, Javier, Zhang, Guoxiang and Navarro, Vincente. 2003. Modeling the hydraulic response of boom clay under thermal impacts, LBNL-51565.
- Savage, K. S., Tingle, T. N., O'Day, P. A., Waychunas, G. A. and Bird, D. K. 2000. Arsenic speciation in pyrite and secondary weathering phases, Mother Lode Gold District, Tuolumne County, California. *Applied Geochemistry*, **15**(8), pp. 1219-1244, LBNL-45157.
- Schoenberg, Michael, Nihei, Kurt, Daley, Rutqvist, Johnny and Majer, Ernie. 2002. Fractured reservoirs: An analysis of coupled elasto-dynamic and permeability changes due to pore pressure variation. *SEG Pore Pressure Workshop*. Galveston, TX. May 12-17, 2002. LBNL-50697 Abs.
- Seol, Soon Jee, Suh, Jung Hee, Song, Yoonho, Kim, Hee Joon and Lee, Ki Ha. 2002. The potential of fracture imaging using high-frequency, single-hole electromagnetic data. *Geophysics*, **67**(4), pp. 1087-1094, LBNL-52236.
- Seol, S.J. Y. Song, and K.H. Lee, Song, Y. and Lee, K.H. 2000. Fracture characterization using single-hole EM data. *World Geothermal Congress*. Kyushu-Tohoku, Japan. May 28-June 10, 2000. LBNL-43941.
- Seol, Yongkoo, Kneafsey, Tim, Finsterle, Stefan and Ito, Kazumasa. 2002. Two-D simulations of flow and transport on a meter-sized unsaturated fractured tuff block. *American Geophysical Union, Fall Meeting 2002*. San Francisco. December 6-10, 2002. LBNL-51532 Abs.
- Seol, Yongkoo, Kneafsey, Timothy J., Ito, Kazumasa and Finsterle, Stefan. 2003. Simulation of unsaturated flow and transport through a fractured meter-sized model block using continuum approach. *Water Resources Research*, LBNL-52818.
- Seol, Y. and Lee, L.S. 2002. Coupled effects of treated effluent irrigation and wetting/drying cycles on transport of atrazine and prometryn through unsaturated laboratory columns. *Journal of Environmental Quality*, **30**, pp. 1644-1652, LBNL-50337.
- Seol, Y. and Lee, L.S. 2002. Effect of dissolved organic matter from treated effluents on sorption of atrazine and prometryn by soils. *Soil Science Society of America Journal*, **64**(6), pp. 1976-1983, LBNL-50338.

- Seol, Yongkoo, Liu, Hui Hai and Bodvarsson, Gudmundur S. 2003. Effects of dry fractures on matrix diffusion in unsaturated fractured rocks. *Geophysical Research Letters*, **30**(2), pp. 1075; 10.1029/2002GL016118, LBNL-49437.
- Seol, Y. and Schwartz, F.W. 2000. Oxidation of DNAPL mixtures using potassium permanganate with a phase-transfer-catalyst; kinetic results from a digital photographic monitoring method. *Ground Water Monitoring and Remediation*, pp. 124-132, LBNL-50335.
- Seol, Y. and Schwartz, F.W. 2002. Phase-transfer-catalyst applied to oxidation of trichloroethylene by potassium permanganate. *Journal of Contaminant Hydrology*, **44**(2), pp. 185-201, LBNL-50336.
- Seol, Y., Zhang, H. and Schwartz, F.W. 2003. A review of in-situ chemical oxidation and heterogeneity. *Environmental and Engineering Geoscience*, **6**(1), pp. 39-51, LBNL-52146.
- Serrano, S., Garrido, F., Campbell, C. G. and García-González, M. T. 2004. Competitive sorption of cadmium and lead in acid soils of Central Spain. *Geoderma*, LBNL-54510.
- Shan, C. 2000. An explanation for the scale-dependency of dispersivity, LBNL-45160 Abs.
- Shan, Chao. 2003. EOSN - A New TOUGH2 Module for Simulating Transport of Noble Gases in the Subsurface. *TOUGH Symposium 2003*. Berkeley, CA. May 12,-14, 2003. pp. 5, LBNL-52431.
- Shan, Chao and Bodvarsson, Gudmundur. 2004. An Analytical Solution for Estimating Percolation Rate by Fitting Temperature Profiles in the Vadose Zone. *Journal of Contaminant Hydrology*, **68**(1-2), pp. 83-95, LBNL-52351.
- Shan, Chao and Bodvarsson, Gudmundur. 2002. An analytical solution for estimating infiltration rate by fitting temperature profile in vadose zone. *Journal of Contaminant Hydrology*, LBNL-50458.
- Shan, Chao and Pruess, Karsten. 2003. Numerical Simulation of Noble Gases as Natural Tracers for Injection Returns and Reservoir Processes in Vapor-Dominated Systems. *28th Workshop on Geothermal Reservoir Engineering*. Palo Alto, Ca, LBNL-52110.
- Shan, Chao and Pruess, Karsten. 2003. EOSN: A TOUGH2 Module for Noble Gases, *LBNL*, Berkeley, pp. 28 LBNL-52379.
- Shan, Chao and Pruess, Karsten. 2003. EOSN - A New TOUGH2 Module for Simulating Transport of Noble Gases in the Subsurface. *Geothermics*, LBNL-52431 Jart.
- Shaughnessy, D.A., Booth, C.H., Nitsche, H., Shuh, D.K., Waychunas, G.A., Wilson, R., Gill, H., Cantrell, K.J. and Serne, R.J. 2003. Molecular interfacial reactions between Pu(VI)

and manganese oxide minerals manganite (MnOOH) and hausmannite (Mn₃O₄).
Environmental Science & Technology, **37**(15), pp. 3367-3374; DOI
3310.1021/es025989z, LBNL-51325.

Shaughnessy, Dawn A., Nitsche, Heino, Serne, R. Jeffrey, Booth, Corwin H., Shuh, David K., Waychunas, Glenn A. and Gill, Herman S. 2000. Interfacial reaction studies of plutonium on manganese oxide hydroxide mineral surfaces. *American Chemical Society Western Regional Meeting*. San Francisco, Ca. October 25-28, 2000. Abstracts of Papers American Chemical Society, **220**: pp. ENVR 227, LBNL-47629 Abs.

Shaughnessy, Dawn A., Nitsche, Heino, Serne, R. Jeffrey, Booth, Corwin H., Shuh, David K., Waychunas, Glenn A. and Gill, Herman S. 2000. Interfacial reaction studies of plutonium on manganese oxide hydroxide mineral surfaces. *American Chemical Society National Meeting*. Washington, D.C. August 20-24, 2000. LBNL-47661 Abs.

Shaughnessy, Dawn A., Nitsche, Heino, Serne, R. Jeffrey, Shuh, David K., Waychunas, Glenn A., Booth, Corwin H., Cantrell, J. and Wilson, Richard E. 2001. Complexation and redox interactions between aqueous plutonium and manganese oxide interfaces. *Actinides 2001 International Conference*. Hayama, Japan. 11/03/2001 - 11/09/2001. LBNL-47777 Abs.

Shaughnessy, Dawn A., Nitsche, Heino, Serne, R. Jeffrey, Shuh, David K., Waychunas, Glenn A., Booth, Corwin H. and Cantrell, Kirk J. 2001. Investigation of molecular interfacial reactions between plutonium and manganese oxide hydroxide mineral surfaces. *American Chemical Society National Meeting*. Chicago, IL. August 26-30, 2001. **222**, LBNL-47654 Abs.

Shaughnessy, Dawn A., Nitsche, Heino, Serne, R. Jeffrey, Shuh, David K., Waychunas, Glenn A., Booth, Corwin H. and Gill, Herman S. 2001. Molecular studies of interfacial plutonium-mineral interactions on manganese oxide hydroxide mineral surfaces. *American Chemical Society National Meeting*. San Diego, CA. April 1-5, 2001. LBNL-47630 Abs.

Shaughnessy, D.A., Nitsche, H., Waychunas, G. A., Booth, C.H., Serne, R.J. and Shuh, D.K. 2000. Interaction of Pu(VI) on manganese oxide hydroxide mineral surfaces. *Stanford Synchrotron Radiation Laboratory (SSRL) Users' Meeting*. Menlo Park, CA., October 18-21, 2000. LBNL-46855 Abs.

Shaughnessy, D., Nitsche, H., Booth, C.H., Shuh, D.K., Waychunas, G. A., Wilson, R., Cantrell, K. and Serne, R. J. 2002. Complexation and redox interactions between aqueous plutonium and manganese oxide interfaces. *Journal Of Nuclear Science Technologies*, LBNL-47777.

Sheridan, C.C., Lee, C., Wakeham, S.G. and Bishop, J.K.B. 2002. Suspended particle organic composition and cycling in surface and midwaters of the equatorial Pacific Ocean. *LBNL Report* LBNL-50751.

- Sheridan, C.C., Lee, D. C., Wakeham, S.G. and Bishop, J. K. B. 2002. Suspended particle organic composition and cycling in surface and midwaters of the equatorial Pacific Ocean. *Deep Sea Research Part I - Oceanographic Research Papers*, **49**(11), pp. 1983-2008, LBNL-50751.
- Shevenell, Lisa, Garside, Larry, Arehart, Greg, van Soest, Matthijs and Kennedy, B. Mack. 2002. Geochemical sampling of thermal and non-thermal waters in Nevada to evaluate the potential for resource utilization. *Geothermal Resources Council (GRC) 2002 Annual Meeting*. Reno, NV. Sept. 22-25, 2002. **26**: pp. 361-366, LBNL-50647.
- Shvidler, Mark and Karasaki, Kenzi. 2000. Multi-continuum description of flow in composite heterogeneous media. *Water Resources Research*, **36**(12), pp. 3615-3630, LBNL-44563.
- Shvidler, Mark and Karasaki, Kenzi. 2003. Probability density functions for solute transport in random fields. *Transport in Porous Media*, **50**, pp. 243-266, LBNL-46309.
- Shvidler, Mark and Karasaki, Kenzi. 2003. Exact averaging of stochastic equations for transport in random fields. *Transport in Porous Media*, **50**, pp. 223-241, LBNL-46310.
- Silin, Dmitry and Patzek, Tadeusz. 2004. On Barenblatt Model of spontaneous Countercurrent Imbibition. *Transport in Porous Media*, **54**(3), pp. 297-322, LBNL-51373.
- Silin, Dmitry and Patzek, Tad. 2003. An Object-Oriented Cluster Search Algorithm, *LBNL*, pp. 1-14 LBNL-51599.
- Silin, Dmitry and Patzek, Tad. 2003. Robust Determination of the Pore Space Morphology in Sedimentary Rocks. *2003 SDE Annual Technical Conference and Exhibition*. Denver, Colorado. October 5-8, 2003. LBNL-52942.
- Silin, Dmitry, Tsang, Chin Fu and Gerrish, Harlan. 2003. Replacing Annual Shut-In Well Tests by Analysis of Regular Injection Data: Field Case Feasibility Study. *Second International Symposium on Underground Injection Science and Technology*. Berkeley, CA. October 22-25, 2003. LBNL-52941.
- Silin, D.B., Korneev, Valeri and Goloshubin, Gennady. 2003. Pressure Diffusion Waves in Porous Media. *SEG 2003 73rd Annual Meeting*. Dallas, TX. October 26-31, 2003. pp. 4, LBNL-52536 Ext. Abs.
- Silin, D.B., Korneev, V. A., Goloshubin, G. M. and Patzek, T. W. 2004. A Hydrologic View on Biot's Theory of Poroelasticity, *LBNL*, Berkeley, CA LBNL-54459.
- Silin, D.B. and Patzek, T.W. 2001. Water Injection into a Low-Permeability Rock - 2. Control Model. *Transport in Porous Media*, **43**(3), pp. 557-580, LBNL-46515.
- Silin, D.B. and Patzek, T.W. 2001. Support-operators method in the identification of permeability tensor orientation, *SPE 59372. SPE Journal*, pp. 385-398, LBNL-46517.

- Silin, D.B. and Patzek, T.W. 2001. Control of Water Injection into a Layered Formation, SPE 59300. *SPE Journal*, **6**(3), pp. 253-261, LBNL-46518.
- Silin, Dmitriy B. and Tsang, Chin-Fu. 2002. Estimation of formation hydraulic properties accounting for pre-test injection or production operations. *Journal of Hydrology*, **265**(1-4), pp. 1-14, LBNL-45079.
- Silin, D.B. and Tsang, C-F. 2001. Estimation of formation hydraulic properties from analysis of regular operations data. *SPE Western Regional Meeting*. Bakersfield, CA. March 26-30, 2001. LBNL-48543.
- Silin, D.B. and Tsang, C-F. 2002. Estimation of formation hydraulic properties from analysis of regular operations data. *Journal of Hydrology*, **265**(1-4), pp. 1-14, LBNL-48543 Jart.
- Silin, D.B. and Tsang, C-F. 2003. A Well-Test Analysis Method Accounting for Pre-Test Operations. *SPE Journal*, **8**(1), pp. 22-31, LBNL-53012.
- Simmons, A., Nieder-Westerman, G., Stuckless, J., Dobson, P., Unger, A.J.A., Kwicklis, E., Lichtner, P., Carey, B., Wolde, G., Murrell, M., Kneafsey, T.J., Meijer, A. and Faybishenko, B. 2003. Natural analogue synthesis report, TDR-NBS-GS-000027 rev00 icn 02 LBNL-53065.
- Simmons, Ardyth, Unger, Andre and Murrell, Michael. 2000. Natural Analogs for the Unsaturated Zone LBID-2335.
- Simmons, Ardyth M., Murrell, Michael T. and Goldstein, Steven J. 2002. Seasonal fluctuation in uranium decay-series composition of waters at Pena Blanca, Mexico. *The Geological Society of America 2002 Denver Annual Meeting*. Denver, CO USA, LBNL-51628 Abs.
- Singleton, M., Sonnenthal, E. , Conrad, M. and DePaolo, D. 2003. Numerical modeling of stable isotope fractionation and multiphase reactive transport of water and water vapor using TOUGHREACT. *Proc. TOUGH Symp.* Berkeley, CA. May 12-14, 2003. LBNL-54066.
- Singleton, M. J., Conrad, M .E. and Neher, E.R. 2002. Isotopic composition of nitrate as a tracer of vadose zone contaminant migration at the Idaho Nuclear Technology and Engineering Center, INEEL. *AGU Fall Meeting*. San Francisco, CA. December 6-10, 2002. EOS, **83**(47): pp. F553, LBNL-54064 Abs.
- Singleton, Micheal J., Maher, Katherine, DePaolo, Donald J., Conrad, Mark E. and Dresel, P.Evan. 2003. Sr isotope compositions of groundwater in the Hanford Site unconfined aquifer as a record of flow, recharge, and vadose zone infiltration. *Geological Society of America Annual Meeting and Exposition*. Seattle, WA. November 2-5, 2003. **34**(7): pp. 532, LBNL-54062.

- Singleton, M. J., Sonnenthal, E. L., Conrad, M. E., DePaolo, D. J. and Gee, G.W. 2003. Multiphase reactive transport modeling of stable isotope fractionation of infiltrating unsaturated zone pore water and vapor using TOUGHREACT. *Vadose Zone Journal*, LBNL-54052.
- Smith, J. Torquil and Morrison, H. Frank. 2002. Estimating equivalent dipole polarizabilities for the inductive response of isolated conductive bodies. *IEEE Transactions on Geoscience and Remote Sensing*, LBNL-51573.
- Smith, J. Torquil and Morrison, H. Frank. 2003. Approximating Spheroid Inductive Responses Using Spheres. *Geophysics*, LBNL-54602.
- Smith, J. Torquil and Morrison, H. Frank. 2004. Optimizing Receiver configurations for Resolution of Equivalent Dipole Polarizabilities in Situ. *IEEE Transactions on Geoscience & Remote Sensing*, LBNL-54585.
- Smith, J. Torquil, Morrison, H. Frank and Becker, Alex. 2002. Resolution depths for some transmitter receiver configurations. *IEEE Transactions on Geoscience and Remote Sensing*, LBNL-51574.
- Smith, J. Torquil, Morrison, H. Frank and Becker, Alex. 2002. Depths of equivalent dipole polarizability resolution for some transmitter receiver configurations. *UXO/Countermine Forum 2002*. Orlando, FL. September 3-6, 2002. LBNL-50636.
- Smith, J. Torquil, Morrison, H. Frank and Becker, Alex. 2004. Parametric Forms and the Inductive Response of a Permeable Conducting Sphere. *Journal of Environmental & Engineering Geophysics*, LBNL-54621.
- Song, D L, Conrad, M E, Sorenson, K S and Alvarez-Cohen, L. 2002. Stable carbon isotope fractionation during enhanced in situ bioremediation of trichloroethene. *Environmental Science & Technology*, **36**(10), pp. 2262-2268, LBNL-50047.
- Song, Y., Kim, H.J. and Lee, K. 2002. An integral equation representation of wide-band EM scattering by thin sheets. *Geophysics*, **67**(3), pp. 746-754, LBNL-50488.
- Song, Y., Kim, H.J. and Lee, K. 2002. High-frequency EM impedance for subsurface imaging. *Geophysics*, **67**(2), pp. 501-510, LBNL-50139.
- Sonnenthal, E. 2000. Drift-Scale Thermal-Hydrological-Chemical Processes and Models. Near-Field Environment Process Model Report, CRWMS M&O. LBNL-50339.
- Sonnenthal, E., Lu, G., Han, L., McClung, I. and Spycher, N. 2003. Software qualification of toughreact v3.0, LBNL-53246.
- Sonnenthal, E. and Spycher, N. 2000. Drift-Scale Coupled Processes (DST and TH Seepage) Models, MDL-NBS-HS-000001 REV00 LBID-2340.

- Sonnenthal, Eric, Spycher, Nicolas, Haukwa, Charles and Xu, Tianfu. 2003. Water-rock-interaction effects on unsaturated flow in heterogeneous fractured rock, LBNL-53867 Abs.
- Sonnenthal, E.L. 2000. Simulation of water-gas-rock interaction in the ambient system, LBNL-45164.
- Sonnenthal, E.L. 2000. Drift scale test thermo-hydro-chemical model informal report, LBNL-45165.
- Sonnenthal, E.L. 2000. Thermal-chemical interpretive analysis, LBNL-45166.
- Sonnenthal, E.L. 2000. Preliminary studies of thermo-hydro-chemical effects of repository heating, LBNL-45167.
- Sonnenthal, E.L. 2000. Interpretative analysis of the thermo-hydro-chemical processes of the drift-scale test, LBNL-45168.
- Sonnenthal, E.L. 2000. Thermo-hydro-chemical analysis for the drift-scale predictive heater test, version 1.0. Milestone Report SPY289M4, LBNL-45169.
- Sonnenthal, E.L. 2000. Mineral-water-gas reactions under boiling conditions in unsaturated fractured tuff: analysis of the drift scale thermal test at Yucca Mountain, Nevada,, LBNL-45170.
- Sonnenthal, E.L. 2000. Numerical modeling of coupled thermo-hydro-chemical processes for the in-situ thermal tests at Yucca Mountain, Nevada, LBNL-45171 Abs.
- Sonnenthal, E.L., Spycher, N.F., Apps, J. and Conrad, M.S. 2000. Assessment of water-rock and fracture-matrix interaction based on reaction-transport modeling of a large-scale thermal test at Yucca Mountain. *American Geophysical Union Annual Fall Meeting*. San Francisco, CA. December 12-16, 2000. LBNL-48291 Abs.
- Sonnenthal, E.L., Spycher, N.F., Apps, J.A. and Conrad, M.E. 2001. A conceptual and numerical model for reaction-transport processes in unsaturated fractured rock at Yucca Mountain: Model validation using the drift scale heater test. *Eleventh Annual V.M. Goldschmidt Conference*. Hot Springs, VA. May 21, 2001. LBNL-48292 Abs.
- Spiller, E. and Perry, D. L. 2002. A facile wet synthesis of nanoparticles of Litharge, the Tetragonal form of PbO. *Proceed. Mater. Res. Soc.*, **704**, pp. 117, LBNL-51015.
- Sposito, G. 2000. Tracer advection by steady groundwater flow in a stratified aquifer, LBNL-44888.

- Spycher, Nicholas, Pruess, Karsten and Ennis-King, Jonathan. 2003. CO₂-H₂O mixtures in the geologic sequestration of CO₂. I. Assessment and calculation of mutual solubilities from 12 to 100 degrees C and up to 600 bar. *Geochimica et Cosmochimica Acta*, **67**(16), pp. 3015-3031, LBNL-50991.
- Spycher, Nicolas, Sonnenthal, Eric and Apps, John. 2000. Simulating long term reactive transport for studies of nuclear waste disposal: Establishing steady initial conditions and thermodynamic data calibration. *American Geophysical Union Fall Meeting 2000*. San Francisco, CA. December 16-21, 2000. LBNL-48290 Abs.
- Spycher, N., Sonnenthal, E. and Apps, J. 2001. Predicting fluid compositions and mineral alteration around nuclear waste emplacement tunnels. *Eleventh Annual V.M. Goldschmidt Conference*. Hot Springs, Virginia. May 20-24, 2001. LBNL-47529 Abs.
- Spycher, Nicholas, Sonnenthal, Eric, Dobson, Patrick, Apps, John, Salah, S., Kneafsey, Tim J. and Haukwa, C. 2003. Drift-Scale Coupled Processes (DST and THC Seepage) Models, MDL-NBS-HS-000001 REV02, BSC, Las Vegas, NV LBID-2473.
- Spycher, Nicolas, Sonnenthal, E.L., Dobson, P.F., Kneafsey, Tim J. and Salah, S. 2003. Drift-scale coupled processes (DST and THC Seepage) models, MDL-NBS-HS-000001 REV02D LBID-2478.
- Spycher, N.F., Sonnenthal, E.L. and Apps, J.A. 2002. Effect of temperature on water-rock interactions around drifts at Yucca Mountain, Nevada. *The Geological Society of America 2002 Denver Annual Meeting*. Denver, CO USA. October 27-30, 2002. LBNL-51087 Abs.
- Spycher, N.F., Sonnenthal, E.L. and Apps, J.A. 2003. Fluid flow and reactive transport around potential nuclear waste emplacement tunnels at Yucca Mountain, Nevada. *Journal of Contaminant Hydrology*, **62-3**(special Issue S1), pp. 653-673, LBNL-49875.
- Starzec, P. and Tsang, C-F. 2002. Use of fracture-intersection density for predicting the volume of unstable blocks in underground openings. *Int. Journal of Rock Mechanics and Mining Sciences*, **39**(6), pp. 807-813, LBNL-48475.
- Steeffel, C. I., Zachara, J. M. and Frederickson, J. K. 2004. Rates of Tc Reduction by Biogenic Fe(II) in Subsurface Sediment. *Goldschmidt Conference*. St. Louis, MO. June 6-12, 2004. LBNL-54412 Abs.
- Stirling, C.H., Lee, D.-C., Christensen, J.N. and Halliday, A.N. 2000. High Precision In Situ ²³⁸U-²³⁴U-²³⁰Th Isotopic Analysis Using Laser Ablation Multiple-Collector ICPMS. *Geochimica et Cosmochimica Acta*, **64**(21), pp. 3737-3750, LBNL-46543.
- Stocking, Andrew J., Deeb, Rula A., Flores, Amparo E., Stringfellow, William, Talley, Jeffrey, Brownell, Richard and Kavanaugh, Michael C. 2000. Bioremediation of MTBE: a practical perspective, Biodegradation. *Biodegradation*, **11**, pp. 187-201, LBNL-45016.

- Stringfellow, William T. 2000. Using iso-pentane to stimulate MTBE biodegradation in ground water treatment systems. *EPA MTBE Biodegradation Workshop*. Cincinnati, Ohio. February 1-3, 2000. LBNL-45017 Abs.
- Stringfellow, W.T. 2001. Evaluation of bacterial biocatalysts for terminal alkane oxidations. *221st American Chemical Society National Meeting*. San Diego, CA. April 1-5, 2001. Abstracts of Papers American Chemical Society, **221**(1-2): pp. BIOT 242, LBNL-50340 Abs.
- Stringfellow, William T. 2002. Applying co-metabolic biological reactions for the ex-situ treatment of Methyl tert-butyl ether contaminated groundwater. Drogos, Arthur F. Diaz & Donna L. *Oxygenates in Gasoline; Environmental Aspects ACS Symposium Series 799*. American Chemical Society, pp. 243-256, LBNL-46417.
- Stringfellow, W.T., Hanlon, J.S., Borglin, S.E. and Quinn, N.W.T. 2003. Source of biochemical oxygen demand in west-side tributaries of the San Joaquin River, California, LBNL-53373.
- Stringfellow, William T., Hines Jr., Robert D., Cockrum, Dirk K. and Kilkenny, Scott T. 2001. Factors influencing biological treatment of MTBE contaminated ground water, Berkeley, CA LBNL-48941.
- Stringfellow, William T., Hines, Robert D., Cockrum, Dirk, K. and Kilkenny, Scott, T. 2000. Factors influencing biological treatment of MTBE in fixed film reactors. *Second International Conference on Remediation of Chlorinated and Recalcitrant Compounds*. Monterey, CA. May 22-25, 2000. LBNL-45021 Abs.
- Stringfellow, W.T., Hines, R.D., Cockrum, D.K. and Kilkenny, S. T. 2000. Factors influencing biological treatment of MTBE in fixed film reactors, Bioremediation and Phytoremediation of Chlorinated and Recalcitrant Compounds. G. B. Wickramanayake, et al. *Bioremediation and Phytoremediation of Chlorinated and Recalcitrant Compounds*. Battelle Press, Columbus, OH, pp. 175-181, LBNL-45487.
- Stringfellow, William T., Hines, Robert D. and Kilkenny, Scott T. 2000. Applying co-metabolic biological reactions for the ex-situ treatment of MTBE contaminated groundwater. *219th Meeting of the American Chemical Society National meeting*. San Francisco, CA. March 26-30, 2000. Abstracts of Papers American Chemical Society, **219**(1-2): pp. ENVR 231., LBNL-45018 Abs.
- Stringfellow, William T., Hines, Robert T., Cockrum, Dirk K. and Kilkenny, Scott T. 2001. Operational and Environmental Factors Controlling the Biological treatment of MTBE Contaminated Groundwater. *Institutional on site Bioremediation*. San Diego, CA. June 4-7, 2001. LBNL-46962 Abs.

- Stringfellow, William T., Hu, Max Q., TerBerg, Robert and Castro, Grace. 2001. Using high performance liquid chromatography (HPLC) for the measurement of fluorobenzoate tracers in the presence of interfering compounds LBNL-47921.
- Stringfellow, W. T. and Oh, Keun-Chan. 2002. Influence of gasoline hydrocarbons on methyl tert-butyl ether biotreatment in fluidized bed bioreactors. *Water Science and Technology*, **2**(2), pp. 223-228, LBNL-51024.
- Stringfellow, William T. and Oh, Keun-Chan. 2002. Initiation of MTBE biotreatment in fluidized-bed bioreactors. *Journal of Environmental Engineering*, **128**(9), pp. 852-861, LBNL-51023.
- Stringfellow, William T. and Quinn, Nigel W.T. 2002. Discriminating between west-side sources of nutrients and organic carbon contributing to algal growth and oxygen demand in the San Joaquin River. CALFED Bay-Delta Program., Berkeley, CA LBNL-51166.
- Stringfellow, William T., Rodriguez, Juan and Castro, Grace. 2001. Partial transformation products as indicators of microbial hydrocarbon degradation in soils. *AGU Fall Meeting*. San Francisco, CA. December 10-14, 2001. LBNL-48940 Abs.
- Stringfellow, W. T. and Rychel, E. H. 2000. Assay of MTBE biodegradation potential in subsurface soils from Chico, CA. *100th Annual Meeting of the American Society for Microbiology*. Los Angeles, CA. May 21-25, 2000. **100**: pp. 552., LBNL-45020 Abs.
- Su, G. W., Geller, J., Hunt, J. R. and Pruess, K. 2002. Small-scale features of gravity-driven flow in unsaturated fractures. *Vadose Zone Journal*, LBNL-50691.
- Su, G.W., Geller, J., Pruess, K. and Hunt, J.R. 2001. Solute transport along preferential flow paths in unsaturated fractures. *Water Resources Research*, **37**(10), pp. 2481-2491, LBNL-49205.
- Su, Grace W., Geller, Jil T., Pruess, Karsten and Hunt, James. 2001. Overview of preferential flow in unsaturated fractures. Boris Faybishenko, Paul Witherspoon, Sally Benson. *Dynamics of Fluids in Fractured Rock, Geophysical Monograph 122*. American Geophysical Union, pp. 147-155, LBNL-50341.
- Su, Grace W., Jasperse, James, Seymour, Donald and Constantz, Jim. 2003. Analysis of Temperatures and water levels in wells to estimate alluvial aquifer hydraulic conductivities. *Ground Water*, LBNL-53167.
- Su, Grace W., Nimmo, John R. and Dragila, Maria I. 2003. Effect of isolated fractures on accelerated flow in unsaturated porous rock. *Water Resources Research*, LBNL-53788.
- Su, Grace W., Wang, Joseph S. and Zacny, Kris. 2004. *In situ* freeze-capturing of fracture water using cryogenic coring. *Vadose Zone*, LBNL-54466.

- Suarez-Rivera, Roberto, Wilson, Stephen M., Nakagawa, Seiji and Magnar-Ness, Olav;. 2001. Frequency scaling for evaluation of shale and mudstone properties from acoustic velocities. *American Geophysical Union (AGU)*. San Francisco, CA. December 10-14, 2001. EOS Trans. AGU, **82**(47), LBNL-51478 Abs.
- Sutton, Rebecca and Sposito, Garrison. 2001. Molecular simulation of interlayer structure & dynamics in 12.4 Å Cs-smectite hydrates. *Journal of Colloid & Interface Science*, **237**(2), pp. 174-184, LBNL-47926.
- Sutton, Rebecca and Sposito, G. 2002. Animated molecular dynamics simulations of hydrated caesium-smectite interlayers. *Geochemical Transactions*, **3**(9), pp. 73-80, LBNL-50650.
- Swift, D.J.P., Green, M., Chen, J., Hubbard, S., Majer, E.L. and Marrang, C. 2000. Deriving hydrofacies from lithofacies at the Oyster Virginia experimental site. *EOS*, **81** (48), LBNL-48441 Abs.
- Thatcher, Tracy L., McKone, Thomas E., Fisk, William J., Sohn, Michael D., Delp, Woody W., Riley, William J. and Sextro, Richard G. 2001. Factors affecting the concentration of outdoor particles indoors (COPI): Identification of data needs and existing data LBNL-49321.
- Thibault, D., Roy, S., Wong, C.S. and Bishop, J.K.B. 2000. The downward flux of biogenic material in the NE subarctic Pacific: Importance of algal sinking and mesozooplankton herbivory, LBNL-46479.
- Todaka, Norifumi, Akasaka, Chitoshi, Xu, Tianfu and Pruess, Karsten. 2003. Modeling of geochemical interactions between acidic and neutral fluids in the Onikobe Geothermal Reservoir. *28th Workshop on Geothermal Reservoir Engineering*. Palo Alto, CA, LBNL-52002.
- Todaka, Noritumi, Akasaka, Chitosi, Xu, Tianfu and Pruess, Karsten. 2003. Reactive Geothermal Transport Simulation to Study the Formaton Mechanism of Impermeable Barrier between Acidic and Neutral Fluid Zones in the Onikobe Geothermal Field, Japan. *LBNL Report*, Berkeley, pp. 36 LBNL-52493.
- Todesco, Micol, Rutqvist, Jonny, Chiodini, Giovanni, Pruess, Karsten and Oldenburg, Curtis M. 2003. Modeling of Recent Volcanic Episodes at Phlegrean Fields (Italy): Geochemical Variations and Ground Deformation. *Geothermics*, LBNL-53603.
- Tokunaga, Tetsu, Wan, Jiamin and Sutton, Stephen R. 2000. Transient film flow on rough fracture surfaces. *Water Resources Research*, **36**(7), pp. 1737-1746, LBNL-45598.
- Tokunaga, T.K. 2000. Fast flow in unsaturated fractured rock, LBNL-44972.
- Tokunaga, T.K. 2000. Flow and transport in water films, LBNL-44947.

- Tokunaga, T.K. 2000. Characteristics of film flow in unsaturated fractured rock, LBNL-44946.
- Tokunaga, T.K. 2000. Reactive transport of selenium and chromium in sediments, LBNL-44945.
- Tokunaga, T.K. 2000. Mechanisms for fast flow in unsaturated fractured rock, LBNL-44944.
- Tokunaga, T. K. 2004. Tensiometry. Hillel, Daniel. *Encyclopedia of Soils in the Environment*. Elsevier, London, UK, LBNL-54909.
- Tokunaga, Tetsu K., Olson, Keith R. and Wan, Jiamin. 2002. Predicted Disappearance of Saturation Hysteresis in Coarse Granular Media Based on Capillary and Gravity Scaling, and Experimental Tests. *American Geophysical Union*. San Francisco, CA. December 6-10, 2002. LBNL-54173 Abs.
- Tokunaga, T.K., Olson, K.R. and Wan, J. 2003. Moisture Characteristics of Hanford Gravels: Bulk, Grain-Surface, and Intragranular Components. *Vadose Zone Journal*, **2**(3), pp. 322-329, LBNL-52691.
- Tokunaga, Tetsu K., Olson, Keith R. and Wan, Jiamin. 2004. Conditions Necessary for Capillary Hysteresis in Porous Media: Tests of Grain-size and Surface Tension Influences. *Water Resources Research*, LBNL-54911.
- Tokunaga, Tetsu K. and Wan, Jiamin. 2001. Approximate boundaries between different flow regimes in fractured rocks. *Water Resources Research*, **37**(8), pp. 2103-2111, LBNL-47854.
- Tokunaga, Tetsu K. and Wan, Jiamin. 2001. Surface-zone flow in unsaturated rock fractures. *Water Resources Research*, **37**(2), pp. 287-296, LBNL-44948.
- Tokunaga, T.K., Wan, J., Firestone, M.K., Hazen, Terry C., Olson, K.R., Herman, D.J., Sutton, S.R. and Lanzirotti, A. 2003. In-situ reduction of chromium(VI) in heavily contaminated soils through organic carbon amendment. *Journal of Environmental Quality*, **32**(5), pp. 1641-1649, LBNL-52528.
- Tokunaga, Tetsu K., Wan, Jiamin, Hazen, Terry C., Firestone, Mary K., Schwartz, Egbert, Olson, Keith R., Sutton, Stephen R., Newville, Matthew, Lanzirotti, Antonio and Rao, William. 2001. Intra-aggregate biogeochemical dynamics of chromium contamination and in-situ remediation. *AGU Fall Meeting 2001*. San Francisco, CA. Dec. 10-14, 2001. LBNL-48930 Abs.
- Tokunaga, T. K., Wan, J., Hazen, T. C., Firestone, M. K., Schwartz, E., Sutton, S. R. and Lanzirotti, A. 2002. Chromium redox transformations in diffusion-limited domains of soils: Linking micro- and macro-scale processes. *Soil Science Society of America Annual Meeting*. Indianapolis, IN. November 11-14, 2002. LBNL-54167 Abs.

- Tokunaga, Tetsu K., Wan, Jiamin, Hazen, Terry C., Schwartz, Egbert, Firestone, Mary K., Sutton, Stephen R., Newville, Matthew, Olson, Keith R., Lanzirotti, Antonio and Rao, William. 2003. Distribution of Chromium Contamination and Microbial Activity in Soil Aggregates. *J Environ Qual*, **32**(2), pp. 541-549, LBNL-48562.
- Tokunaga, T. K., Wan, J. and Olson, Keith R. 2002. Saturation-matric potential relations in gravel - art. no. 1214. *Water Resources Research*, **32**(10), pp. 1242, LBNL-49644.
- Tokunaga, Tetsu K., Wan, Jiamin, Pena, Jasquelin, Sulton, Stephen R. and Newville, Matthew. 2004. Hexavalent Uranium Diffusion into Soils from Conscentrated Acidic and Alkaline Solutions. *Environmental Science & Technology*, LBNL-54910.
- Tokunaga, T. K., Wan, J. M., Firestone, M. K., Hazen, T. C., Schwartz, E., Sutton, S. R. and Newville, M. 2001. Chromium diffusion and reduction in soil aggregates. *Environmental Science & Technology*, **35**(15), pp. 3169-3174, DOI 3110.1021/es010523m, LBNL-48032.
- Tokunaga, T. K., Wan, J. M., Hazen, T. C., Schwartz, E., Firestone, M. K., Sutton, S. R., Newville, M., Olson, K. R., Lanzirotti, A. and Rao, W. 2001. Diffusion-limited chromium reduction in soil aggregates. *American Chemical Society Meeting*. Chicago, IL. August 26-30, 2001. LBNL-54168 Abs.
- Tomutsa, Liviu, Freifeld, Barry, Kneafsey, Timothy J. and Stern, Laura A. 2002. X-ray computed tomography observation of methane hydrate dissociation. *Society of Petroleum Engineers(SPE) Gas Tecnology Symposium*. Calgary, Alberta, Canada, **SPE 75533**, LBNL-49580.
- Toomey, Aoife, Bean, Christopher J. and Scotti, Oona. 2002. Effect of Nonlinear Surface Interaction on Seismic Response of a Fracture. *Society of Exploration Geophysicists 72nd Annual International Exposition and Annual Meeting*. Salt Lake City, UT. October 6-11, 2002. LBNL-53910 Ext. Abs.
- Toomey, Aoife and Hoversten, G. M. 2003. Modeling 3D Anisotropic Seismic Wave Propagation on a Beowulf Cluster Using a Variable Grid Finite Difference Scheme. *SEG International Exposition & 72nd Annual Meeting*. Salt Lake City, UT. October 6-11, 2002. LBNL-52372 Pstr.
- Toomey, A., Korneev, V. A., McEvelly, T. V. and Nadeau, R. M. 2002. What is the origin of the high Q anomaly at the boundary between the locked and Creeping segments of the San Andreas Fault? *American Geophysical Union Fall Meeting*. San Francisco, CA. December 5-10, 2002. LBNL-53909 Abs.
- Toomey, Aoife and Nakagawa, Seiji. 2003. Seismic monitoring of shear stress on fractures/faults. *Society of Exploration Geophysicists 73rd Annual International Meeting & Exposition*. Dallas, TX. October 25-31, 2003. LBNL-53913 Ext. Abs.

- Toomey, Aoife and Nakagawa, Seiji. 2003. Modeling the Mechanical and Seismic Response of Fractures. *EGS-AGU-EUG Joint Invited Assembly 2003*. Nice, France. April 6-11, 2003. LBNL-53914.
- Toomey, Aoife and Nakagawa, Seiji. 2004. Mechanical and Seismic Properties of Fractures under Static Shear Stress. *Journal of Geophysical Research*, LBNL-54860.
- Torgersen, T. and Kennedy, B.M. 2000. Noble gas processes in hydrocarbon fields: end-members, mixing, lines and secondary migration paths, LBNL-46483.
- Torn, M. and Guay, C. 2002. Carbon explorer assessment of carbon variability and carbon flux systematics in the upper ocean during sofix, LBNL-51537 Abs.
- Torn, M., Lapenis, A.G., Timofeev, A., Fischer, M., Babikov, I. and Harden, J. 2002. Organic carbon and carbon isotopes in modern and 100-year-old soil archives of the Russian steppe. *Global Change Biology*, **8**(10), pp. 941-953, LBNL-48540.
- Torn, M. and Southon, M. S. 2001. A new ^{13}C correction for radiocarbon samples from elevated CO_2 experiments. *Radiocarbon*, **43**(2B), pp. 691-694, LBNL-46489.
- Torn, M.S. 2000. Quantifying soil c dynamics with elevated CO_2 isotope tracers and a simple model, LBNL-44913.
- Torn, M.S., Berry, J.A., Fischer, M.L., Billesbach, D., Riley, W.J. and Zhao, W. 2001. Carbon monitoring at the ARM Southern Great Plains site. *2001 ARM Program Science Team Meeting*. Atlanta, Ga. March 19-23, 2001. LBNL-50342 Abs.
- Torn, Margaret S., Berry, Joseph A., Fischer, Marc L., Riley, William J., Billesbach, David, Giles, Lawrence, Zhao, Wenguang and Pesenson, Igor. 2002. From crops to boundary layer and back: the ARM/LBNL carbon project in the Southern Great Plains, LBNL-51834 Abs.
- Torn, M.S., Berry, J.A., Riley, W.J., Fischer, M.L., Billesbach, D., Helliker, B. and Giles, L. 2002. From crops to boundary layer and back down again: The ARM/LBNL carbon project in the Southern Great Plains, LBNL-51299.
- Torn, Margaret S., Davis, S., Bird, J.A., Shaw, M.R. and Conrad, M.E. 2003. Automated analysis of $^{13}\text{C}/^{12}\text{C}$ ratios in CO_2 and dissolved inorganic carbon for ecological and environmental applications. *Rapid Communications in Mass Spectrometry*, LBNL-53147.
- Torn, M.S., Fischer, M.L., Riley, W.J., Billesbach, D.P. and Berry, J.A. 2002. Carbon cycle measurements at the DOE ARM-CART site in Oklahoma, LBNL-51302.
- Torn, M.S., Fischer, M.L., Riley, W.J., Pesenson, I., Berry, J.A., Giles, L. and Billesbach, D.P. 2003. Carbon cycling in the Southern Great Plains: The ARM/LBNL Carbon Project, LBNL-52811 Abs.

- Torn, Margaret S. and Harte, John. 2002. Biotic and biogeochemical feedbacks to climate change, LBNL-51786 Abs.
- Torn, M.S., Lapenis, A., Timofeev, A., Fischer, M., Babikov, I. and Harden, J. 2001. Soil carbon cycling in the Russian Steppe: Radiocarbon analysis of modern and historic Russian soils, LBNL-48557.
- Torn, M. S., Masiello, S. A., Basile-Doelsch, I., Bijoor, N. and Sutton, R. 2002. Mineral control of carbon storage in Andisols: Case studies and application to other soils. *COST ACTION 622: Soil Resources of European Volcanic Systems*. Manderscheid, Germany. April 24-28, 2002. Proceedings of COST ACTION 622: Soil Resources of European Volcanic Systems, **40**: pp. 7-8, LBNL-53797 Ext. Abs.
- Torn, Margaret S., Vitousek, Peter M. and Trumbore, Susan E. 2002. The influence of nutrient availability on soil organic matter turnover estimated by incubations and radiocarbon modeling. *Ecosystems*, LBNL-51747.
- Toussaint, Renaud and Pride, Steven R. 2004. Interacting Damage Models Mapped Onto Ising and Percolation Models. *Physical Review E*, LBNL-54777.
- Trautz, Robert C. and Flexser, Steve. 2004. Determination of Moisture Diffusivity for Unsaturated Fractured Rock Surfaces. *Dynamics of Fluids in Fractured Rocks*. Berkeley, CA. February 10-12, 2004. LBNL-54322 Ext. Abs.
- Trautz, R. C. and Wang, J. S. Y. 2002. Seepage into an underground opening constructed in unsaturated fractured rock under evaporative conditions - art. no. 1188. *Water Resources Research*, **38**(10), pp. 1188, LBNL-47006.
- Tretbar, David R., Arehart, Greg B. and Christensen, John N. 2000. Dating gold deposition in a Carlin-type gold deposit using Rb/Sr methods on the mineral galkhaite. *Geology*, **28**(10), pp. 947-950, LBNL-46544.
- Truesdell, Alfred, Smith, Bill, Eney, Steve and Lippmann, Marcelo. 2001. Recent geochemical tracing of injection-related reservoir processes in the NCPA Geysers field. *Geothermal Resources Council 2001 Annual Meeting*. San Diego, CA. August 26-29, 2001. LBNL-47874.
- Truesdell, A. H., Lippman, M.J., Rodriguez, M. H. and Perez, A. 2003. Influence of Reservoir Processes on CO₂ in Cerro Prieto Steam. *GRC 2003 Annual Meeting*. Morelia, Michoacan, Mexico, LBNL-52642 Abs.
- Truesdell, Alfred H., Lippmann, Marcelo J., Rodriguez, Marco H. and Perez, Alfredo. 2003. Influence of reservoir processes on gas in Cerro Prieto steam, LBNL-52642.

- Truesdell, A.H., Lippmann, M.J., Rodriguez, Marco Helio and Perez, Alfredo. 2003. Influence of reservoir processes on CO₂ in Cerro Prieto steam. *Geothermal Resources Council 2003 Annual Meeting*. Morelia, Michoacan, Mexico. October 12-15, 2003. LBNL-52642 Abs.
- Truesdell, Alfred H., Lippmann, Marcelo J., Rodriguez, Marco H. and Perez, Alfredo. 2003. Influence of reservoir processes on gas in Cerro Prieto steam, LBNL-53499.
- Truesdell, A. H., Smith, Bill, Eney, Steve and Lippman, M.J. 2001. Recent Geochemical Tracing of Inejction-Related Reservoir Processes in the NCPA Geysers Field. *Geothermal Resources Council Annual Meeting*. Stanford, CA, **25**: pp. 475-489, LBNL-47874.
- Trumbore, S.E. and Torn, M. 2003. Soils and Global Carbon Cycle. Holland, E. A. *Soils and Global Change*. NATO Advanced Study Institute, LBNL-44910.
- Tsang, Chin-Fu. 2000. Modeling groundwater flow and mass transport in heterogeous media-issues and challenges. Capetown, South Africa, LBNL-45640.
- Tsang, Chin-Fu. 2000. Strongly heat-driven hydrological processes in unsaturated fractured rock: modeling of field experiments, LBNL-44917.
- Tsang, Chin-Fu. 2000. Dynamic thermal logging method for measuring permeability variation in the vadose zone, LBNL-44908.
- Tsang, Chin-Fu. 2003. DECOVALEX - an International Project on Coupled Thermo-Hydro-Mechanical Processes in Fractured Rocks. *American Geophysical Union(AGU) Fall Meeting*. San Francisco, CA. December 8-13, 2003. LBNL-53746 Abs.
- Tsang, C.F. 2000. An overview of coupled THM processes affecting flow and transport in fractured rocks. Wuhan, China, LBNL-45596 Abs.
- Tsang, C. F. 2000. A summary and review of the nirex95 approach to performance assessment, LBNL-44904.
- Tsang, C.F. and Li, G. 2000. Seepage Model for PA Including Drift Collapse, MDL-NBS-HS-000002 REV 00 LBID-2332.
- Tsang, Chin Fu and Li, G. 2003. Seepage model for PA including drift collapse, MDL-NBS-HS-000002 REV02D LBID-2479.
- Tsang, Chin-Fu and Apps, John. 2003. Abstracts, the Second International Symposium on Underground Injection Science and Technology LBNL-53836 Abs.
- Tsang, Chin-Fu and Apps, John (eds.). 2003. Proceedings, the Second International Symposium on Underground Injection Science and Technology. *Second International Symposium on*

- Underground Injection Science and Technology*. LBNL. 10/22/2003-10/25/2003. LBNL, LBNL-53837.
- Tsang, Chin-Fu, Benson, Sally M., Kobelski, Bruce and Smith, Robert E. 2002. Scientific considerations related to regulations development for CO₂ sequestration in brine aquifers. *Environmental Geology*, **42**(2-3), pp. 275-281, LBNL-48477.
- Tsang, C-F. and Doughty, C. 2003. Multi-Rate Flowing Fluid Electric Conductivity Logging Method. *Water Resources Research*, LBNL-52518.
- Tsang, C-F. and Doughty, C. 2003. A particle-tracking approach to simulating transport in complex fracture. *Water Resources Research*, **39**(7), pp. 1174-1178 (1110.1029/2002WR001514), LBNL-50537.
- Tsang, Chin-Fu and Moreno, Luis. 2001. Flow channeling and analysis of tracer tests in heterogeneous porous media. *Water Research Journal*, LBNL-49153.
- Tsang, Chin-Fu, Moreno, Luis, Tsang, Yvonne W. and Birkholzer, Jens. 2001. Dynamic channeling of flow and transport in saturated and unsaturated heterogeneous media. Daniel D. Evans, Thomas J. Nicholson, Todd C. Rasmussen. *Flow and Transport through Unsaturated Fractured Rock, 2nd edition, Geophysical Monograph 42*. American Geophysical Union, pp. 33-44, LBNL-45474.
- Tsang, Chin-Fu and Shestakov, Vsevolod M. 2002. Introduction to the Special Issue: "Subsurface flow and transport: from theoretical studies to actions at field sites". *International Journal of Geosciences Environmental Geology*, **42**(2-3), pp. 125-126, DOI: 110.1007/s00254-00001-00480-00250, LBNL-53946.
- Tsang, C-F., Stephansson, O. and Hudson, J.A. 2000. A discussion of thermo-hydro-mechanical (THM) processes associated with nuclear waste repositories. *International Journal of Rock Mechanics and Mining Science*, **37**(1-2), pp. 397-402, LBNL-43957.
- Tsang, Y. 2000. A field test for understanding thermally driven coupled processes partially saturated fractured welded tuff. *International Journal of Rock Mechanics and Mining Science*, **37**(1-2), pp. 337-356, LBNL-44895.
- Tsang, Yvonne. 2001. Understanding isothermal and nonisothermal flow in partially saturated fractured porous media field tests and modeling, LBNL-49157 Abs.
- Tsang, Yvonne. 2002. Section 4.7.1 Yucca Mountain heater tests. Cliff Ho, Steve Webb, John Wilson. *Gas Transport in Porous Media*. Academic Kluwer/Plenum, LBNL-51614.
- Tsang, Y. 2003. Effect of coupled processes driven by the radioactive decay heat on the performance of the proposed repository at Yucca Mountain, LBNL-53429 Abs.

- Tsang, Yvonne, Mukhopadhyay, Sumit, Rutqvist, Jonny, Sonnenthal, Eric and Spycher, Nicolas. 2003. The cooling phase of the Yucca Mountain heater test. *IAEA Waste Management Research*. Berkeley, CA. 2003. LBNL-53875 Abs.
- Tsang, Y.W. 2000. Underground hydrological experiments in the unsaturated zone to characterize heterogeneous fractured welded tuff. Wuhan, P.R. China, LBNL-47029.
- Tsang, Y.W., Huang, K. and Bodvarsson, G.S. 2000. Estimation of the heterogeneity of fracture permeability by simultaneous modeling of multiple air-injection tests in partially saturated fractured tuffs, *Dynamics of fluids in fractured rocks: concepts and recent advances. Geophysical Monograph*, **122**, pp. 99-114, LBNL-48547.
- Tsang, Y.W. and Tsang, C.-F. 2001. A particle tracking method for advective transport in a fracture with diffusion into finite matrix blocks with application to tracer injection-withdrawal testing. *Water Resources Research*, **37**(3), pp. 831-836, LBNL-43952.
- Tseng, Hung-Wen and Lee, Ki Ha. 2001. Joint inversion for mapping subsurface hydrological parameters. San Antonio, TX, LBNL-47607.
- Tseng, Hung-Wen and Lee, Ki Ha. 2003. Application of joint inversion for mapping fluid parameters. *GHGT-6*. Kyoto, Japan. January 22-24, 2003. Proceedings of the 6th SEGJ International Symposium. - Imaging Technology: pp. 328-333, LBNL-51494.
- Tseng, Hung-Wen and Lee, Ki Ha. 2004. Three Dimensional Interpretations of Single-Well Electromagnetic Data for Geothermal Applications. *29th Workshop on Geothermal Reservoir Engineering*. Stanford, CA. January 26-28, 2004. LBNL-54281.
- Tseng, Hung-Wen, Lee, K. H. and Becker, Alex. 2003. Three-dimensional interpretation of electromagnetic data using a modified extended Born approximation. *Geophysics*, **68**(1), pp. 127-137, LBNL-51061.
- Tseng, Hung-Wen, Lee, Ki Ha and Becker, Alex. 2002. Electromagnetic impedance system for mapping the shallow subsurface. *The 7th international symposium on recent advances in exploration geophysics (RAEG2003)*. Kyoto, Japan, LBNL-51929 Abs.
- Tseng, Hung-Wen; Lee, Ki Ha; Becker, Alex.; 2003. A High Frequency Electromagnetic Impedance Imaging System. *SAGEEP 2003, Symposium on the Application of Geophysics to Engineering and Environmental Problems*. San Antonio, TX, LBNL-52111 Ext. Abs.
- Tsibakhashvili, N.Y., Asatiani, N.V., Abuladze, M.K., Birkaya, B.G., Sapojnikova, N.A., Mosulishvili, L.M. and Holman, H. Y. N. 2002. Capillary electrophoresis of Cr(VI) reducer *Arthrobacter oxydans*. *Biomedical Chromatography*, **16**(5), pp. 327-331, LBNL-50927.

- Tsibakhashvili, N.Y., Mosulishvili, L.M., Kalabegishvili, T.L., Pataraya, D.T., Gurielidze, M.A., Nadareishvili, G.S. and Holman, H. Y. N. 2002. Chromate-resistant and reducing-microorganisms in Georgia basalts: Their distribution and characterization. *Fresenius Environmental Bulletin*, **11**(10), pp. 352-361, LBNL-50911.
- Tsibakhashvili, N.Y., Mosulishvili, N.A., Kalabegishvili, T.L., Kirkesali, T.I., Frontasyeva, M.V., Pomyakushina, E.V., Pavlov, S.S. and Holman, H.-Y.N. 2003. Epithermal neutron activation analysis (ENAA) studies of chromium uptake by arthrobacter oxydans. *Journal of Radioanalytical and Nuclear Chemistry*, LBNL-53385.
- Unger, Andre, Finsterle, Stefan and Bodvarsson, Gudmundur. 2002. Mechanisms controlling radon gas concentrations in the exploratory studies facility and implications on the operation of the ventilation system. *Journal of Contaminant Hydrology*, LBNL-51308.
- Unger, A. J. A., Faybishenko, B., Bodvarsson, Gudmundur and Simmons, A. 2003. Simulating Infiltration Tests in Fractured Basalt at the Box Canyon Site, Idaho. *Vadose Zone*, LBNL-53047.
- Unger, Andre J.A., Faybishenko, Boris, Bodvarsson, Gudmundur S. and Simmons, Ardyth M. 2002. A Three-Dimensional Model for Simulating Poned Infiltration Tests in the Variably Saturated Fractured Basalt at the Box Canyon Site, Idaho LBNL-44633.
- Unger, A.J.A., Faybishenko, B., Bodvarsson, S. and Simmons, A.M. 2000. A three-dimensional model for simulation ponded infiltration tests in the variably saturated fractured basalt at the Box Canyon site, Idaho. *Journal of Contaminant Hydrology*, LBNL-45817.
- Unger, A. J. A., Finsterle, Stefan and Bodvarsson, Gudmundur. 2003. Transport of Radon Gas into a Tunnel at Yucca Mountain - Estimating Large-Scale Fractured Tuff Hydraulic Properties and Implications on the Operation of the Ventilation System. *Journal of Contaminant Hydrology*, pp. 20, LBNL-52577.
- Unger, Andre J.A., Simmons, Ardyth M. and Bodvarsson, Gudmundur S. 2001. Simulating infiltration in unsaturated basalt for the large-scale aquifer pumping and infiltration test at INEEL. *Journal Of International Association for Hydraulic Research*, LBNL-49100.
- Urzua, L., Powell, T., Cumming, W.B. and Dobson, P. 2002. Apacheta, a new geothermal prospect in Northern Chile. *Geothermal Resources Council Annual Meeting (Transactions)*. Reno, NV. September 22-25, 2002. **26**: pp. 65-69, LBNL-50457.
- Valette-Silver, Nathalie, Silver, Paul, Niu, Fenglin, Daley, Tom and Majer, Ernest. 2003. Developing a methodology for imaging stress transients at seismogenic depth. *American Geophysical Union (AGU) Fall Meeting 2003*. San Francisco, CA. December 8-13, 2003. LBNL-53736 Abs.
- Van Loy, M.D., Riley, W.J., Daisey, J.M. and Nazaroff, W.W. 2001. Dynamic behavior of semivolatile organic compounds in indoor air. 2. Nicotine and phenanthrene with carpet

- and wallboard. *Environmental Science and Technology*, **35**(3), pp. 560-567, LBNL-42674.
- van Soest, M. C., Hilton, D. R., MacPherson, C. G. and Matthey, D. P. 2002. Resolving sediment subduction and crustal contamination in the Lesser Antilles Island arc: A combined he-O-Sr isotope approach. *Journal of Petrology*, **43**(1), pp. 143-170, LBNL-50641.
- van Soest, M.C., Kennedy, B.M., Evans, W.C. and Mariner, R.H. 2001. Helium and carbon isotope systematics of springs in the Three Sisters region, Central Oregon, USA. *AGU 2001 Fall Meeting*. San Francisco, CA. December 10-14, 2001. EOS, **83**(47): pp. V21B-1201, LBNL-50645 Abs.
- van Soest, M. C., Kennedy, B. M., Evans, W. C. and Mariner, R. H. 2002. Mantle helium and carbon isotopes in Separation Creek Geothermal Springs, Three Sisters area, Central Oregon: Evidence for renewed volcanic activity or a long term steady state system. *Geothermal Resource Council Meeting*. Reno, NV. September 22-25, 2002. **26**: pp. 361-366, LBNL-50646.
- van Soest, M.C., Torgersen, T. and Kennedy, B.M. 2000. Rare gas isotopic and elemental constraints on oil migration and hydrogeological processes: The Statfjord, Snorre and Gullfaks Fields, Norwegian North Sea oil province. *Goldschmidt 2000 Conference*. Oxford,UK. Sept. 3-8, 2000. LBNL-50643 Abs.I.
- van Soest, M. C., Torgersen, T. and Kennedy, B. M. 2000. Rare gas isotopic and elemental constraints on oil migration and hydrogeological processes: The Statfjord, Snorre and Gullfaks Fields, Norwegian North Sea oil province. *American Geophysical Union Fall Meeting*. San Francisco, CA. December 15-19, 2000. LBNL-50643 Abs. II.
- Various. 2001. The NABIR Strategic Plan - 2001 LBNL-49054.
- Vasco, D. 2002. Assessing non-uniqueness: An algebraic approach. *The Gilbert Fest*. La Jolla, CA, LBNL-51562.
- Vasco, D, W. and Datta-Gupta, Akhil. 2001. Asymptotics, saturation fronts and high resolution reservoir characterization. *Transport in Porous Media*, **42**(3), pp. 315-350, LBNL-46457.
- Vasco, D, W. and Datta-Gupta, A. 2001. Asymptotics, streamlines, and reservoir modeling: A pathway to production tomography. *The Leading Edge*, **20**(10), pp. 1164-1171, LBNL-50532.
- Vasco, D., Johnson, L. and Marquess, O. 2003. Resolution, uncertainty, and whole Earth tomography. *Journal of Geophysics Research*, **108**(B1), pp. 2022, LBNL-51177.
- Vasco, D, W. and Karasaki, K. 2001. Inversion of pressure observations: An integral formulation. *Journal of Hydrology*, **253**(1-4), pp. 27-40, LBNL-46462.

- Vasco, D. W., Karasaki, K. and Doughty, C. 2000. Using surface deformation to image reservoir dynamics. *Geophysics*, **65**(1), pp. 132-147, LBNL-43324.
- Vasco, D. W., Karasaki, K. and Nakagome, O. 2002. Monitoring reservoir production using surface deformation at the Hijiori test site and the Okuaizu geothermal field, Japan. *Geothermics*, **31**(3), pp. 303-342, LBNL-51174.
- Vasco, D., Wicks, Jr., C., Karasaki, K. and Marques, O. 2001. Geodetic imaging: High Resolution Reservoir monitoring using satellite interferometry. *Geophysical Journal International*, **149**, pp. 555-571, LBNL-46464.
- Vasco, D. W. 2000. An algebraic formulation of geophysical inverse problems. *Geophysical Journal International*, **142**(3), pp. 970-990, LBNL-44522.
- Vasco, D. W. 2003. Seismic imaging of reservoir flow properties: Time-lapse pressure changes. *Geophysics*, LBNL-52486.
- Vasco, D. W., Datta Gupta, Akhil, Bechrens, Ron, Condon, Pat and Rickett, James. 2003. Seismic imaging of reservoir flow properties: Time-lapse amplitude changes. *Geophysics*, LBNL-52354.
- Vasco, D. W. and Finsterle, Stefan. 2004. Numerical trajectory calculations for the efficient inversion transient flow and tracer observations. *Water Resources Research*, **40**(W01507), pp. 1-17, LBNL-51180.
- Vasco, D.W., Karasaki, Kenzi and Kishida, Kiyoshi. 2001. A coupled inversion of pressure and surface displacement. *Water Resources Research*, **37**(12), pp. 3071-3089, LBNL-49090.
- Vasco, D.W., Keers, Henk and Karasaki, Kenzi. 2000. Estimation of reservoir properties using transient pressure data: An asymptotic approach. *Water Resources Research*, **36**(12), pp. 3447-3465, LBNL-46459.
- Vasco, D.W., Keers, Henk, Peterson Jr., John E. and Majer, Ernest. 2003. Zeroth order asymptotics: Wave form inversion of the lowest degree. *Geophysics*, **68**(2), pp. 614-628, LBNL-48685.
- Veerapaneni, Srinivas, Wan, J. and Tokunaga, T.K. 2000. Motion of particles in film flow. *Environmental Science & Technology*, **34**(12), pp. 2465-2471, LBNL-45560.
- Venterea, R.T., Riley, W. and Rolston, D. 2002. Mechanistic modeling of nitrification, denitrification, soil hydrology, and N losses in an agricultural system, LBNL-50274.
- Viswanthan, H.S., Wolfsberg, A.V., Reimus, P.W., Ware, D. and Lu, G. 2003. Colloid facilitated transport in fractured rocks: parameter estimation and comparison with experimental data. *2003 International High-Level Radioactive Waste Management Meeting*. Las Vegas, Nevada. March 30-April 2, 2003. American Nuclear Society, LBNL-52268.

- Wagner, R., Tsang, Y., Vogt, T., Lin, W., Case, J., Conrad, M., DeLoach, L., Freifeld, B., Homuth, F., Jones, R., Levy, S., Marshall, B., Peterson, J.E., Sobolik, S. and Williams, K. 2002. Thermal Testing Measurements Report: ANL-NBS-HS-000041 REV00, BSC, Las Vegas, NV, pp. 372 LBID-2474.
- Wan, Jiamin, Larsen, Joern T., Tokunaga, Tetsu K. and Zheng, Zuoping. 2003. pH Neutralization and Zonation in Alkaline-Saline Tank Waste Plumes. *Environmental Science & Technology*, LBNL-53646.
- Wan, J., Tokunaga, T., Orr, Jr., Franklin M., O'Neill, J. and Connors, R. W. 2000. Glass Cast of Rock Fracture Surfaces: A New Tool for Studying Flow and Transport. *Water Resources Res.*, **36**(1), pp. 355-360, LBNL-38892.
- Wan, J. and Tokunaga, T. .K. 2002002. Partitioning of clay colloids at air-water interfaces. *Journal of Colloid & Interface Science*, **247**(1), pp. 54-67, LBNL-49155.
- Wan, Jiamin, Tokunaga, Tetsu K., Saiz, Eduardo, Olsen, Keith R. and Larsen, Joern T. 2002. Colloid formation resulting from highly alkaline and saline waste tank solution leaking into sediments at the Hanford site, Berkeley, CA LBID-2446.
- Wan, Jiamin, Veerapaneni, Srinivas, Gadelle, Fred and Tokunaga, Tetsu K. 2001. Generation of stable microbubbles and their transport through porous media. *Water Resources Research*, **37**(5), pp. 1173-1182, LBNL-45559.
- Wang, Joseph S., Cook, Paul J., Trautz, Robert C., Liu, Jianchun and Bodvarsson, G.S. 2000. Comparison of lower lithophysal and middle nonlithophysal hydrogeological characteristics of potential repository tuff units at Yucca Mountain. *Topical Sessions at the Fall Geological Society of America Annual Meeting*. Reno, NV, LBNL-46594 Abs.
- Wang, J. S. Y. 2000. Remembering Neville G.W. Cook, the scientist, colleague and friend - Charm, Cinch, and Champ. *International Journal of Rock Mechanics and Mining Science*, **37**(1-2), pp. 28-30, LBNL-50275.
- Wang, J.S.Y. and Bodvarsson, G.S. 2002. Unsaturated zone testing at Yucca Mountain: Then and now. *The Geological Society of America 2002 Denver Annual Meeting*. Denver, CO USA. October 27-30, 2002. LBNL-51088 Abs.
- Wang, J. S. Y. and Bodvarsson, G. S. 2003. Evolution of the unsaturated zone testing at Yucca Mountain. *Journal of Contaminant Hydrology*, **62-63**, pp. 337-360, LBNL-49876.
- Wang, J.S.Y., Cook, P.J., Trautz, R.C., Hu, Q. and Salve, R. 2000. In situ field testing of processes LBID-2323.

- Wardell, L.J., Delmelle, P., Fischer, T. , Lewicki, J.L., Malavassi, E., Stix, J. and Strauch, W. 2003. Volcanic gas workshop fosters international focus on state of the art measurement techniques. *EOS*, LBNL-53967.
- Watanabe, Toshiki, Nihei, Kurt T., Nakagawa, Seiji and Myer, Larry R. 2001. Frequency-domain visco-acoustic full waveform inversion of laboratory data. *American Geophysical Union (AGU) 2001 Fall Meeting*. San Francisco, Ca. December 10-14, 2001. *EOS*, **82**(47): pp. F861, LBNL-50828 Abs.
- Waychunas, G. 2002. Grazing incidence x-ray spectroscopy of mineral surfaces. *Reviews in Mineralogy and Geochemistry*. Mineralogical Society of America, LBNL-50277.
- Waychunas, G. 2002. Luminescence of natural and synthetic apatites. Rakovan, J. and Hughes, J., Eds. *Mineralogy and Geochemistry*, LBNL-50278.
- Waychunas, G. 2002. Synchrotron-based micro techniques for the characterization of minor phases, LBNL-50279.
- Waychunas, G. 2002. XANES and EXAFS studies of aqueous Zn precipitation on hydrous ferric oxide, LBNL-50280.
- Waychunas, G., Davis, J. and Rietmeyer, R. 2002. Formation and structure of iron-rich oxyhydroxide nanometer coatings: Comparison of laboratory-produced and aquifer-seeded samples, LBNL-50281.
- Waychunas, G., Liu, P. and Shuh, D. 2002. Simulation of CA₂+ K and L edges via multiple scattering and multiplet calculations LBNL-50282.
- Waychunas, G., Myneni, S., Traina, S. and Bigham, J. 2002. EXAFS, XANES, and simulation study of AsO₄, SeO₄ and SO₂ substituted Schwertmannites, LBNL-50283.
- Waychunas, G., Myneni, S., Traina, S., Bigham, J., Fuller, C. and Davis, J. 2002. Reanalysis of the Schwertmannite structure and the incorporation of SO₄²⁻ groups: An IR, XAS, WAXS and simulation study, LBNL-50276.
- Waychunas, G.A. 2002. Structure, aggregation and characterization of nanoparticles. Banfield, J.F. *Nanoparticles and empowerment*. Mineralogy Society of America/Geochemical Society, pp. 105-166, LBNL-51323.
- Waychunas, G. A. and Fuller, C.C. 2003. Surface complexation and precipitate geometry for aqueous Zn(II) sorption on Ferrihydrite: I. EXAFS analysis. *Geochimica Cosmochimica Acta*, **66**, pp. 1119-1137, LBNL-48552.
- Waychunas, G.A., Fuller, C.C., Davis, J.A. and Rehr, J.J. 2003. Surface complexation and precipitate geometry for aqueous Zn(II) sorption on ferrihydrite: II. XANES analysis. *Geochimica Et Cosmochimica Acta*, **67**, pp. 1031-1043, LBNL-48561.

- Webb, Steve and Pruess, Karsten. 2003. The Use of Fick's law for Modeling trace gas diffusion in porous media. *Transport in Porous Media*, **51**(3), pp. 327-341, LBNL-51363.
- Webb, S. W., Oldenburg, Curtis M., Pruess, K. and Moridis, G. J. 2002. Diffusive Mixing of Stably Stratified Gases in Subsurface Reservoirs. *American Geophysical Union Fall Meeting (AGU)*. San Francisco, CA. December 6-10, 2002. EOS, LBNL-51443 Abs.
- White, Alicia, Borglin, Sharon E. and Hazen, Terry C. 2003. Mesoscale aerobic and anaerobic landfill bioreactors. *American Association for the Advancement of Science (AAAS)*. Denver, CO. February 13-18, 2003. LBNL-53372 Abs.
- White, Don , Hirsche, Keith, Tom, Davis, Majer, Ernie, Hutcheon, Ian , Burrowes, Geoff , Adair, Ryan , Maxwell, Sean and Hubert, Fabriol. 2004. Methods for the Prediction, Monitoring and Verification of CO₂ Movement: Results from the IEA Weyburn CO₂ Storage and Monitoring Project. *Third Annual Conference on Carbon Capture and Sequestration*. Alexandria, VA. May 2-6, 2004. LBNL-54509 Abs.
- Wilkinson, T.J., Perry, D.L., Martin, Michael C. and McKinney, Wayne R. 2000. Applications of synchrotron infrared microspectroscopy to the study of fingerprints. *221st National Meeting of the American Chemical Society*. San Diego, CA. April 1-5, 2001. LBNL-47131 Abs.
- Wilkinson, T.J., Perry, D.L., Martin, Michael C., McKinney, Wayne R. and Cantu, A.A. 2000. Applications of synchrotron infrared microspectroscopy to ink-paper material interactions. *221st National Meeting of the American Chemical Society*. San Diego, CA. April 1-5, 2001. LBNL-47130 Abs.
- Wilkinson, T.J., Perry, D.L., Martin, Michael C., McKinney, Wayne R. and Cantu, A.A. 2000. Synchrotron infrared microspectroscopic studies of the chemistry of ink on paper. *APS March Meeting*. Seattle, WA. March 12-16, 2001. LBNL-47142 Abs.
- Wilkinson, T.J., Perry, D.L., Martin, M.C., McKinney, W.R., Cantu, A.A. and Thompson, A.C. 2001. Applications of synchrotron technology to ink-paper material interactions and related aging kinetics. *222nd American Chemical Society National Meeting*. Chicago, IL. August 26-30, 2001. LBNL-47981 Abs.
- Wilkinson, T. J., Perry, D. L., Martin, M. C., McKinney, W. R. and Martin, M. C. 2002. Use of Synchrotron Reflectance Infrared Spectromicroscopy as a Rapid, Direct Non-Destructive Method for the Study of Inks on Paper. *Appl. Spectrosc.*, **56**, pp. 800, LBNL-50162.
- Wilkinson, T.J., Perry, D.L., Martin, M.C., McKinney, W.R. and Thompson, A.C. 2001. Applications of synchrotron technology to the study of latent human fingerprints. *222nd American Chemical Society National Meeting*. Chicago, IL. August 26-30, 2001. LBNL-47980 Abs.

- Wilkinson, T. J., Perry, D. L., McKinney, W. R. and Martin, M. C. 2002. Physics and Forensics. *Physics World*, **15**, pp. 43, LBNL-50163.
- Williams, K. 2002. Monitoring microbe-induced physical property changes using high-frequency acoustic waveform data: Toward the development of a microbial megascope. Geophysics, UC Berkeley, Berkeley, pp. 108 *Master of Science Thesis, UC Berkeley, Berkeley*, pp. 108, LBNL-50692
- Williams, K. H., Brockman, F. J. and Johnson, L. R. 2003. Monitoring Microbe-Induced Physical Property Changes Using High-Frequency Acoustic Waveform Data. *Fall 2002 American Geophysical Union Meeting*. San Francisco, CA. December 6-10,2002. **H12-0939**, LBNL-53148 Abs.
- Williams, Kenneth H., Kowalsky, Mike B. and Peterson, John E. 2003. High Resolution Imaging of Vadose Zone Transport Using Surface and Crosswell Ground Penetrating Radar Methods, *LBNL*, Berkeley, CA LBNL-53151.
- Witherspoon, Paul. 2000. Investigations at Berkeley on fracture flow in rocks: From the parallel plate model to chaotic systems. *Dynamics of Fluids in Fractured Rock, Geophysical Monograph 122*. American Geophysical Union, LBNL-46782.
- Witherspoon, P. A. and Bodvarsson, G. S. 2001. Geological challenges in radioactive waste isolation: Third worldwide review. *Third Worldwide Review Workshop*. Berkeley, CA. April 27-28, 2001. Lawrence Berkeley National Laboratory, LBNL-49767.
- Wolfsberg, Andrew, Lu, Guoping, Glascoe, Lee, Reimus, Paul, Ware, Doug and McGraw, Maureen. 2001. Thermal and colloid related processes affecting plutonium transport in nts groundwater. *AGU Conference 2001*. San Francisco, CA. Dec. 10-14, 2001. LBNL-48882 Abs.
- Wood, T. R. and Faybishenko, B. 2000. Large-scale field investigations in fractured basalt in Idaho: Lessons learned. Looney, B. B. and Falta, R., Eds. *Vadose Zone Science and Technology Solutions*. Battelle Press, OH, pp. 396-405, LBNL-50284.
- Wood, T. R., Podgorney, R.R. and Faybishenko, B. 2000. Small scale field tests of water flow in a fractured rock vadose zone. Looney, B. B. and Falta, R., Eds. *Vadose Zone Science and Technology Solutions*. Battelle Press, OH, pp. Section in CD-Rom, LBNL-50285.
- Woods, Katharine N., Singleton, Michael J. and Conrad, Mark. 2003. Application of a modified denitrifying bacteria method for analyzing groundwater and vadose zone pore water nitrate at the Hanford Site, WA, USA. *Geological Society of America Annual Meeting and Exposition*. Seattle, WA. November 2-5, 2003. **34(7)**: pp. 405, LBNL-54061 Pstr.
- Woodward, Nicholas, Benson, Sally M. and York, Michael. 2000. An R&D roadmap for carbon sequestration in geologic formations. New Orleans, LA, LBNL-46699 Abs.

- Wu, Y-S. 2000. On the effective continuum method for modeling multiphase flow, multicomponent transport and heat transfer in fractured rock, pp. 299-312, LBNL-43535.
- Wu, Yu-Shu. 2000. A virtual node method for handling well bore boundary conditions: In modeling multiphase flow in porous and fractured media. *Water Resources Research*, **36**(3), pp. 807-814, LBNL-47533.
- Wu, Yu-Shu. 2001. Non-Darcy displacement of immiscible fluids in porous media. *Water Resources Research*, **37**(12), pp. 2943-2950, LBNL-45228.
- Wu, Yu-Shu. 2002. Numerical simulation of Single-Phase & Multiphase non-Darcy flow in porous and fractured reservoirs. *Transport in Porous Media*, **49**(2), pp. 209-240, LBNL-45855.
- Wu, Y-S. 2002. An approximate analytical solution for non-Darcy flow in fractured media. *Water Resources Research*, **38**(3), pp. 5-1--5-7, LBNL-48197.
- Wu, Yu-Shu. 2002. Numerical simulation of Single-Phase & Multiphase non-Darcy flow in porous and fractured reservoirs. *Transport in Porous Media*, **49**(2), pp. 209-240, LBNL-45855.
- Wu, Y-S. 2003. Non-Darcy Flow Behavior Mean High-Flux Injection Wells in Porous and Fractured Formations. *International Symposium on "Underground Injection"*. Berkeley, CA. October 22-25, 2003. pp. 14, LBNL-52541.
- Wu, Yu-Shu. 2004. A Unified Numerical Framework Model for Simulating Flow, Transport, and Heat Transfer in Porous and Fractured Media. *Computational Methods in Water Resources, XV International Conference*. Chapel Hill, NC. June 13-17, 2004. LBNL-54589.
- Wu, Y.S., Liu, H.H., Bodvarsson, G.S. and Zellmer, K.E. 2001. A triple-continuum approach for modeling flow and transport processes in fractured rock. *Journal of Contaminant Hydrology*, LBNL-48875.
- Wu, Y.S., Pan, L., Zhang, W. and Bodvarsson, G.S. 2002. Characterization of flow and transport processes within the unsaturated zone of Yucca Mountain, Nevada. *Journal of Contaminant Hydrology*, **54**(3-4), pp. 215-247, LBNL-46572.
- Wu, Y. S., Zhang, K. N., Ding, C., Pruess, K., Elmroth, E. and Bodvarsson, G. S. 2002. An efficient parallel-computing method for modeling nonisothermal multiphase flow and multicomponent transport in porous and fractured media. *Advances in Water Resources*, **25**(3), pp. 243-261, LBNL-47937.
- Wu, Y-S., Bandurraga, M., Ahlers, C.F., Finsterle, S., Chen, Haukwa, C., Bodvarsson, G.S., Kwicklis, Rousseau and Flinn. 2000. On calibration of the UZ site-scale model of Yucca Mountain, LBNL-46450.

- Wu, Y-S. and Forsyth, Peter A. 2001. On the selection of primary variables in numerical formulation for modeling multiphase flow in porous media. *Journal of Contaminant Hydrology*, **48**(3-4), pp. 277-304, LBNL-44322.
- Wu, Y.-S., Li, J., Xu, T., Haukwa, C., Zhang, W., Liu, H.H. and Ahlers, C.F. 2000. UZ Flow Models and Submodels, MDL-NBS-HS-000006 REV 00 LBID-2330.
- Wu, Yu-Shu and Lin, Jianchun. 2002. Integration of perched water and chloride data in modeling flow processes within the unsaturated zone of Yucca Mountain, Nevada. *2002 IAHR International Groundwater Symposium*. Berkeley, CA. March 25-28, 2002. LBNL-48702.
- Wu, Yu-Shu, Liu, Hui-Hai and Bodvarsson, Gudmundur. 2003. Effect of small-scale fractures on flow and transport processes at Yucca Mountain, Nevada. *2003 International High-Level Radioactive Waste Management*. Las Vegas, NV. March 30-April 2, 2003. Proceedings of the 10th International High-Level Radioactive Waste Management, LBNL-51848.
- Wu, Yu-Shu and Lu, Guoping. 2003. Modeling Unsaturated Flow and Transport Processes in Fractured Tuffs of Yucca Mountain. *Modflow and More 2003 Understanding Through Modeling*. Golden, Colorado. September 18-21, 2003. LBNL-53439.
- Wu, Yu-shu, Lu, Guoping, Zhang, keni and Bodvarsson, G.S. 2003. A mountain-scale model for charactering unsaturated flow and transport in fractured tuff of Yucca Mountain. *TOUGH Symposium 2003*. Berkeley, CA. May 12-14, 2003. Proceedings of TOUGH Symposium, LBNL-52524.
- Wu, Yu-shu, Lu, Guoping, Zhang, Keni and Bodvarsson, G.S. 2003. Modeling unsaturated flow and transport processes in fracture tuffs of Yucca Mountain, LBNL-53439.
- Wu, Yu-Shu, Lu, Guoping, Zhang, Keni and Bodvarsson, G.S. 2003. A site-scale flow model for the unsaturated zone of Yucca Mountain, Nevada, LBNL-53874 Abs.
- Wu, Yu-Shu, Lu, Guoping, Zhang, Keni, Pan, Lehua and Bodvarsson, Gudmundur S. 2003. Analyzing flow patterns in unsaturated fractured rock of Yucca Mountain using an integrated modeling approach. *Water Resources Research*, LBNL-54006.
- Wu, Yu-Shu, Lu, G., Zhang, Keni, Zhang, G., Liu, Hui-Hai, Xu, Tianfu and Sonnenthal, E.L. 2003. UZ flow models and submodels, MDL-NBS-HS-000006 REV01D LBID-2481.
- Wu, Yu-Shu and Pan, Lehua. 2003. Special relative permeability functions with analytical solutions for transient flow into unsaturated rock matrix. *Water Resources Research*, **39**(4), pp. 3-1/3-9; doi: 10.1029/2002WR001495,001200, LBNL-50443.
- Wu, Yu-Shu and Pan, Lehua. 2004. An Analytical Solution for Transient Radial Flow through Unsaturated Fractured Porous Media. *Water Resources Research*, LBNL-54587.

- Wu, Yu-Shu, Pan, Lehua, Hinds, Jennifer and Bodvarsson, G.S. 2001. Modeling capillary barrier effects in unsaturated fractured tuffs. *9th International High-Level Radioactive Waste Management Conference*. Las Vegas, NV. April 29-May 3, 2001. LBNL-47469.
- Wu, Yu-Shu, Pan, Lehua and Pruess, Karsten. 2004. A Physically Based Approach for Modeling Multiphase Fracture-Matrix Interaction in Fractured Porous Media. *Advances in Water Resources*, LBNL-54749.
- Wu, Yu-Shu and Pruess, Karsten. 2000. Numerical simulation of nonisothermal multiphase tracer transport in heterogeneous fractured porous media. *Advances in Water Resources*, **23**(7), pp. 699-723, LBNL-43534.
- Wu, Y.-S. and Pruess, K. 2000. Integral solutions for transient fluid flow through a porous medium with pressure-dependent permeability. *International Journal of Rock Mechanics and Mining Science*, **37**(1-2), pp. 51-61, LBNL-43924.
- Wu, Y.-S., Zhang, K. and Pruess, K. 2002. Massively Parallel Simulation of Flow and Transport in Porous in Variably Saturated Porous and Fractured Media. *XIV International Conference on Computational Methods in Water Resources*. Delft University of Technology, The Netherlands. June 23-28, 2002. *Developments in Water Science*, **1**(47): pp. 289-296, LBNL-49407.
- Wu, Yu-Shu, Zhang, Winnie, Pan, Lehua, Hinds, Jennifer and Bodvarsson, Gudmundur S. 2002. Modeling Capillary Barriers in Unsaturated Fractured Rock - art. no. 1253. *Water Resources Research*, **38**(11), pp. 35-31/35-12, LBNL-46876.
- Wuy, Linda. 2003. DOE-NABIR PI Workshop: Abstracts 2003, LBNL-51925.
- Xie, Ganquan, Li, Jianhua, Majer, Ernest, Zuo, Daxin and Oristaglio, Micheal. 2000. 3-D electromagnetic modeling and nonlinear inversion. *Geophysics*, **65**(3), pp. 804-822, LBNL-44409.
- Xie, G., Li, J., Majer, E., Zuo, D. and Oristaglio, M. 2000. New 3-D electromagnetic modeling and inversion, LBNL-46523.
- Xu, T. 2000. Multiphase fluid flow and subsequent geochemical transport in variably saturated fractured rocks: Applications, LBNL-45506.
- Xu, T. 2000. Multiphase fluid flow and subsequent geochemical transport in variably saturated fractured rocks: 1. Approaches, LBNL-45507.
- Xu, T., Apps, John and Pruess, K. 2003 Mass Transfer, Mineral Alteration, and CO₂ Sequestration in a Sandstone-Shale System, *LBNL*, Berkeley, pp. 46 LBNL-52566.

- Xu, Tianfu, Apps, John A. and Pruess, Karsten. 2000. Analysis of mineral trapping for CO₂ disposal in deep aquifers. San Francisco, CA, LBNL-46992 Abs.
- Xu, Tianfu, Apps, John A. and Pruess, Karsten. 2001. Numerical simulation of CO₂ disposal by mineral trapping in deep water aquifers. *Applied Geochemistry*, LBNL-48399.
- Xu, Tianfu, Apps, John A. and Pruess, Karsten. 2003. Reactive geochemical transport simulation to study mineral trapping for CO₂ disposal in deep arenaceous formations. *Journal of Geophysical Research*, **108**(B2), pp. 2071; doi:2010.1029/2002JB001979, LBNL-50089.
- Xu, Tianfu, Apps, John A. and Pruess, K. 2003. CO₂ Sequestration in Bedded Sandstone-Shale Sequences. *Second Annual Carbon Sequestration Conference*. Alexandria, VA. May 5-8, 2003. pp. 10, LBNL-52616.
- Xu, Tianfu, Apps, John A. and Pruess, Karsten. 2003. Geologic Sequestration of CO₂ and Associated H₂S and SO₂ in Bedded Sandstone-Shale Sequences. *American Geophysical Union (AGU) 2003 Fall Meeting*. San Francisco, CA. December 8-12, 2003. LBNL-53642 Abs.
- Xu, Tianfu, Ontoy, Yvette, Molling, Phil, Spycher, Nicholas, Parini, Mauro and Pruess, Karsten. 2003. Reactive transport modeling of injection well scaling and acidizing at Tiwi Field Philippines. *Geothermics*, LBNL-53991.
- Xu, Tianfu and Pruess, Karsten. 2000. Hydrothermal fluid flow and mineral alteration in a fractured rock under multiphase H₂O - CO₂ mixture conditions. Kyushu-Tohoku, Japan, LBNL-44345.
- Xu, Tianfu and Pruess, Karsten. 2001. On fluid flow and mineral alteration in fractured caprock of magmatic hydrothermal systems. *Journal of Geophysical Research*, **106**(B2), pp. 2121-2138, LBNL-44804.
- Xu, T. and Pruess, K. 2001. Modeling Multiphase Non-isothermal Fluid Flow and Reactive Geochemical Transport in Variably Saturated Fractured Rocks: 1. Methodology. *American Journal Of Science*, **301**, pp. 16-33, LBNL-45124.
- Xu, Tianfu and Pruess, K. 2001. Thermophysical properties of sodium nitrate and sodium chloride solutions and their effects on fluid flow in unsaturated media LBNL-48913.
- Xu, T., Pruess, K. and Brimhall, George. 2000. Chapter 5: Oxidative weathering chemical migration through an unsaturated-saturated medium. Company, Westinghouse Savannah River. *Vadose Zone Science and Technology Solutions*. U.S. Department of Energy, LBNL-50286.
- Xu, Tianfu, Pruess, Karsten and Brimhall, George. 2002. Modeling reactive geochemical transport in natural fractured rock systems over geological time. Berkeley, California, LBNL-49062.

- Xu, T., Pruess, K., Pham, M., Klein, C. and Sanyal, S. 2001. Reactive chemical transport simulation to study geothermal production with mineral recovery and silicon scaling, LBNL-47920.
- Xu, T., Sonnenthal, Eric and Bodvarsson, Gudmundur. 2003. A Reaction-Transport Model for Calcite Precipitation and Evaluation of Infiltration-Percolation Fluxes in Unsaturated Fractured Rock. *Journal of Contaminant Hydrology*, **64**(1-2), pp. 113-127, LBNL-48282.
- Xu, Tianfu, Sonnenthal, Eric, Spycher, Nicolas and Pruess, Karsten. 2003. Using Toughreact To Model Reactive Fluid Flow And Geochemical Transport In Hydrothermal Systems. *Geothermal Resources Council (GRC) 2003 Annual Meeting*. Morelia, Mexico. October 12-15, 2003. LBNL-53643.
- Xu, Tianfu, Sonnenthal, Eric, Spycher, Nicolas and Pruess, Karsten. 2003. TOUGHREACT: A new code of the TOUGH Family for Non-Isothermal multiphase reactive geochemical transport in variably saturated geologic media. *2003 TOUGH Workshop*. Berkeley, CA. May 12-14, 2003. pp. 4, LBNL-52342.
- Xu, Tianfu, Sonnenthal, Eric, Spycher, Nicholas, Pruess, Karsten, Brimhall, George and Apps, John. 2000. 2001. Modeling multi-phase non-isothermal fluid flow and reactive geochemical transport in variably saturated fractured rocks: 2. Applications to supergene copper enrichment and hydrothermal flows. *American Journal Of Science*, **301**(1), pp. 34-59, LBNL-45123.
- Xu, Tianfu, White, Stephen P., Pruess, Karsten and Brimhall, George H. 2000. 2000. Modeling of pyrite oxidation in saturated and unsaturated subsurface flow systems. *Transport in Porous Media*, **39**(1), pp. 25-26, LBNL-45508.
- Yoon, Seongsik., Datta-Gupta, A., Vasco, D. W. and Pope, G.A. 2002. Inverse modeling of partitioning interwell tracer tests: A streamline approach. *Water Resources Research*, **38**(6), pp. 10.1029, LBNL-51178.
- Yoon, S., Malallah, A. H., Datta Gupta, A., Vasco, D. and Behrens, R. A. 2000. 2001. A multiscale approach to production data integration using streamline models. *Proceedings of the SPE Annual Technical Conference and Exhibition*. Houston, TX. October 3-6, 1999. SPE, **SPE 56653**: pp. 182-192, LBNL-51175.
- Zarate, M., Lundquist, T., Mountford, S., Quinn, N., Green, F and Leighton, T. 2002. Performance of an algal-bacterial selenium-removal system in the San Joaquin Valley of California. *The American Chemical Society*, **219**(1): pp. 172, LBNL-50287.
- Zawislanski, P.T., Mountford, H.S., Gabet, E.J., McGrath, A.E. and Wong, H.C. 2001. Selenium distribution and fluxes in intertidal wetlands, San Francisco Bay, California. *Journal of Environmental Quality*, **30**(3), pp. 1080-1091, LBNL-48714.

- Zawislanski, Peter, Benson, Sally, TerBerg, Robert and Borglin, Sharon. 2002. Land disposal of San Luis drain sediments, Panoche Water District, South Dos Palos, California LBNL-51025.
- Zawislanski, P.T., Benson, S.M., TerBerg, R. and Borglin, S.E. 2001. Land disposal of San Luis drain sediments: Progress Report October 1998 through November 2000 LBNL-47861.
- Zawislanski, Peter T., Benson, Sally M., Terberg, Robert and Borglin, Sharon E. 2003. Selenium speciation, solubility, and mobility in land-disposed dredged sediments. *Environmental Science & Technology*, **37**(11), pp. 2415-2420, LBNL-53312.
- Zawislanski, P.T., Chau, S., Mountford, H., Wong, H.C. and Sears, T.C. 2001. Accumulation of selenium and trace metals on plant litter in a tidal marsh. *Estuarine, Coastal and Shelf Science*, **52**(5), pp. 589-603, LBNL-48457.
- Zhang, Guoxiang, Bodvarsson, Gudmundur and Spycher, Nicolas. 2002. Concept of Biobarrier for nuclear waste geological disposal, LBNL-51580 Abs.
- Zhang, Guoxiang, Spycher, Nicolas, Samper, Javier and Molinero, Jorge. 2003. Effects of subsurface microbial processes on underground nuclear waste repositories. *10th International High-Level Radioactive Waste Management Conference*. Las Vegas, NV. March 30-April 3, 2003. LBNL-53805.
- Zhang, Guoxiang, Zheng, Zuoping and Wan, Jiamin. 2004. Modeling reactive geochemical transport of concentrated aqueous solutions in variably saturated media. *Water Resources Research*, LBNL-54384.
- Zhang, Jieying, Monteiro, Paulo J. M. and Morrison, H. Frank. 2001. Noninvasive surface measurement of corrosion impedance of reinforcing bar in concrete - Part 1: Experimental results. *ACI Materials Journal*, **98**(2), pp. 116-125, LBNL-54511 Pt. 1.
- Zhang, Jieying, Monteiro, Paulo J. M. and Morrison, H. Frank. 2002. Noninvasive surface measurement of corrosion impedance of reinforcing bar in concrete - Part 2: Forward modeling. *ACI Materials Journal*, **99**(3), pp. 242-249, LBNL-54511 Pt. 2.
- Zhang, Keni and Woodbury, Allan D. 2002. An Krylov finite element approach for multi-species containment transport in discretely fractured porous media. *Advances in Water Resources*, **25**(7), pp. 705-721, LBNL-54500.
- Zhang, Keni and Woodbury, Allan D. 2003. Arnoldi reduction method for simulation of multi-species contaminant transport in discretely fractured media. *2003 GSA Annual Meeting*. Seattle, Washington. Nov. 2-5, 2003. LBNL-53345 Abs.
- Zhang, Keni, Wu, Y-S., Bodvarsson, Gudmundur and Liu, H.-H. 2003. Determination of Unsaturated Flow Path in a Randomly Distributed Fractured Network. *2003 World Water and Environmental Congress*. Philadelphia, PA. June 23-26, 2003. Proceedings of the

- World Water and Environmental Congress: pp. 10, LBNL-52192.
- Zhang, Keni, Wu, Yu-Shu and Bodvarsson, G.S. 2003. Massively parallel computing simulation of fluid flow in the unsaturated zone of Yucca Mountain, Nevada. *Journal of Contaminant Hydrology*(62-63), pp. 381-399, LBNL-48883.
- Zhang, Keni, Wu, Yu-Shu and Bodvarsson, G.S. 2002. The use of parallel computing to simulate fluid flow in the unsaturated zone of Yucca Mountain, Nevada. *The Geological Society of America 2002 Denver Annual Meeting*. Denver, CO USA. October 27-30, 2002. LBNL-51089 Abs.
- Zhang, Keni, Wu, Yu-Shu and Bodvarsson, G. S. 2003. Parallel computing simulation of fluid flow in the unsaturated zone of Yucca Mountain, Nevada. *Journal of Contaminant Hydrology*, **62-3**(Special Issue SI), pp. 381-399, LBNL-54504.
- Zhang, Keni, Wu, Yu-Shu, Bodvarsson, Gudmundur S. and Liu, Hui-Hai. 2002. Modeling focusing flow in a large-scale unsaturated fracture network. *American Geophysical Union 2002 Fall Meeting*. San Francisco, CA. December 6-10, 2002. LBNL-51483 Abs.
- Zhang, Keni, Wu, Yu-Shu, Bodvarsson, G.S. and Liu, Hui-Hai. 2003. Flow focusing in unsaturated fracture networks: A numerical investigation. *Vadose Zone Journal*, LBNL-52819.
- Zhang, Keni, Wu, Yu-Shu, Bodvarsson, G.S. and Liu, Hui-Hai. 2003. Flow focusing in unsaturated fracture networks: a numerical investigation, LBNL-52819 Abs.
- Zhang, Keni, Wu, Yu-Shu, Ding, Chris and Pruess, Karsten. 2001. Application of parallel computing techniques to a large-scale reservoir simulation. Stanford, CA, LBNL-47292.
- Zhang, K., Wu, Y-S., Ding, C. and Pruess, K. 2003. TOUGH2_MP: A Parallel Version of TOUGH2. *TOUGH Symposium 2003*. Berkeley, CA. May 12-14, 2003. Proceedings of TOUGH Symposium, LBNL-52508.
- Zhang, Keni, Wu, Yu-Shu, Ding, Chris, Pruess, Karsten and Elmroth, Erik. 2000. Parallel computing technique for large-scale reservoir simulation of multi-component and multiple fluid flow. *SPE 16th Reservoir Simulation Symposium*. Houston, TX. February 11-14, 2001. LBNL-46195 Abs.
- Zhang, Silong, Norman, Miller, Mauro, Casadei and Jianyun, Zhang. 2000. Calibration and verification study of TOPMODEL in the Leonhe Basin and the Yilvohe Basin in China LBID-2313.
- Zhang, Yingqi, Oldenburg, Curtis M. and Benson, Sally M. 2003. Simulating Remediation of CO₂ Leakage from Geological Storage Sites. *American Geophysical Union(AGU) Fall Meeting 2003*. San Francisco, CA. December 8-13, 2003. LBNL-53677 Abs.

- Zhang, Y., Oldenburg, C. M. and Benson, Sally M. 2004. Remediation Strategies for CO₂ Gas Leakage Plumes in the Vadose Zone. *Third Annual Conference on Carbon Capture and Sequestration*. Alexandria, VA. May 2-6, 2004. LBNL-54508 Abs.
- Zhang, Yingqi, Oldenburg, Curtis M. and Benson, Sally M. 2004. Vadose Zone Remediation of CO₂ Leakage from Geologic CO₂ Storage Sites. *Vadose Zone*, LBNL-54680.
- Zhang, Y. and Pinder, G. 2003. Latin-hypercube lattice - samples selection strategy for correlated random hydraulic - conductivity fields. *Water Resources Research*, LBNL-53043.
- Zhang, Y., Pinder, G. and Herrera, G. 2003. Enabling technology for the least-cost design of groundwater quality monitoring networks. 1. Methodology. *Water Resources Research*, LBNL-53046.
- Zhang, Y., Pinder, G. and Herrera, G. 2003. Enabling technology for the least-cost design of groundwater quality monitoring networks. 2. Field application. *Water Resources Research*, LBNL-53044.
- Zhao, P., Kennedy, B.M., Shuster, D.L., Ji, D., Xie, E. and Du, S. 2001. Implications of noble gas geochemistry in the Yangbajing geothermal field, Tibet. *10th Water-Rock Interaction Symposium (WRI-10)*. Villasimius, Italy. June 5-10, 2001. A. A. Balkema Publishers, 2: pp. 947-950, LBNL-48655.
- Zheng, Zuoping, Tokunaga, T.K. and Wan, Jiamin. 2003. Influence of calcium carbonate on U(VI) sorption to soils. *Environmental Science and Technology*, **37**(12), LBNL-54565.
- Zheng, Zuoping and Wan, Jiamin. 2003. Release of contaminant U(VI) from soils. *Journal of Environmental Quality*, LBNL-54564.
- Zheng, Zuoping, Wan, Jiamin and Tokunaga, T.K. 2004. Sodium meta-autunite colloids: Synthesis, characterization, stability, LBNL-54563.
- Zhou, Quanlin, Birkholzer, Jens T., Javandel, Iraj and Jordan, Preston D. 2003. Simulation of groundwater flow at the LBNL site using TOUGH2. *TOUGH Symposium, 2003*. Berkeley, CA. May 12-14, 2003. LBNL-52512.
- Zhou, Quanlin, Birkholzer, Jens T., Javandel, Iraj and Jordan, Preston D. 2004. Modeling Three-Dimensional Groundwater Flow and Advective Contaminant Transport at a Heterogeneous Mountainous Site in Support of Remediation Strategy. *Vadose Zone*, LBNL-54318.
- Zhou, Quanlin, Bodvarsson, Gudmundur S., Liu, Hui-Hai and Oldenburg, Curtis M. 2002. Characterization of Spatial Variability of Hydrogeologic Properties for Unsaturated Flow in the Fractured Rocks at Yucca Mountain, Nevada. *International Groundwater Symposium on Bridging the Gap Between Measurements and Modeling in Heterogeneous*

- Media*. Berkeley, CA. March 25-28, 2002. LBNL-50505.
- Zhou, Quanlin, Gelhar, Lynn W. and Jacobs, Bruce. 2002. Comparison of Field-Scale Effective Properties of Two-Phase Flow in Heterogeneous Porous Media Obtained by Stochastic Analysis and Numerical Experiments. *International Groundwater Symposium on Bridging the Gap Between Measurements and Modeling in Heterogeneous Media*. Berkeley, CA. March 25-28, 2002. LBNL-50504.
- Zhou, Quanlin, Liu, Hui-Hai, Bodvarsson, Gudmundur S. and Oldenburg, Curtis M. 2003. Flow and transport in unsaturated fractured rock: Effects of multiscale heterogeneity of hydrogeologic properties. *Journal of Contaminant Hydrology*, **60**(1-2), pp. 1-30, LBNL-50503.
- Zimmerman, Robert W. and Bodvarsson, Gudmundur S. 2001. An approximate solution for one-dimensional absorption in unsaturated porous media, LBNL-49099.