Chung-Chieng "Aaron" Lai

U. S. Citizen, DOE Q-cleared
Married with 2 children

Work: Los Alamos National Laboratory
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Education:

Ph.D. (1981–84):	Depts. of Meteorology and Oceanography, Texas A&M Univ.
M.S. (1978–80):	Dept. of Atmospheric Sciences, Univ. of California, Los Angeles (UCLA).
M.S. (1974–76):	Institute of Oceanography, National Taiwan Univ.
B.S. (1968–72):	Dept. of Geography & Meteorology, National Taiwan Univ.

Personal Development Training:

Los Alamos Nat'l Lab. HR-T&D, 1998: Managing communications and conflict.
Los Alamos Nat'l Lab. HR-T&D, 1998: Essentials of supervision in LANL.
Los Alamos Nat'l Lab. HR-T&D, 1996: Program Development Overview: The Marketing Skills Training.
Los Alamos Nat'l Lab. HR-T&D, 1995: Budgeting, Property and Procurement in the Laboratory Context.
Los Alamos Nat'l Lab. HR-T&D, 1994: The Seven Habits of Highly Effective People.
Wilson Learning Corp. Social Style Series (Managing Interpersonal Relationship), 1993: Dimensions of social style, Building on social style differences, Managing styles in conflict.
Dale Carnegie & Assoc., Inc. Dale Carnegie Course, 1991: Public speaking and human relations. Certificate.

Professional Experiences:

2/93 – **Climate Studies Team Leader**, Technical Staff Member, Earth & Environmental Science Division, Los Alamos National Lab., Los Alamos, NM.
Category Team Member, Geosciences, Space Science and Astrophysics (GSSA) Category, Laboratory-Directed Research & Development (LDRD) Office (1997 - 2000).
Science & Engineering Advisory Council Member, 1999 –.
(1) Participated in Dept. of Energy's (DOE) Atmospheric Radiation Measurement (ARM) program regional atmospheric and cumulus clouds modeling research. (2/93 – 9/93)
(2) Completed the tasks of coupling the UCLA Atmospheric general circulation model (GCM) with the Los Alamos Parallel Ocean Program (POP) Ocean GCM and the CASA Giga-bit distributive modeling experiment (10/93 – 9/94). Completed the coupling of NCAR CCM2-Omega and Los Alamos POP into a global coupled ocean-atmospheric model (10/94 – 02/96).
(3) Leading the team of *"flux coupler"* for the coupling between NCAR CCM3 and Los Alamos POP sponsored by the DOE CHAMMP/CCPP and HPCC programs. (10/95 -)
(4) Project Leader of two Campus-Laboratory-Cooperation projects, three Laboratory-Directed R&D project. Developed a regional coupled ocean-atmospheric model over the Northeast Pacific and US west coast for the cloud and precipitation simulation. (11/95 - 10/98)
EES Division Diversity Working Group member. (1/96 – 9/97)
Asian American Diversity Working Group member. (3/98 –)

7/89 – 1/93: **Scientist II & Data Manager**, Institute for Naval Oceanography (INO/UCAR)/Naval Research Laboratories, Stennis Space Center, MS.
Harvard Univ. Visiting Scholar, Center for Earth and Planetary Physics. (10/90 – 9/92)
Chairperson and member, INO Scientific & Technical Steering Committee (Director's Committee). (9/91 – 12/91)
Project Leader, Office of Naval Research (ONR)/INO Data Assimilation & Model Evaluation Experiment (DAMÉE). (10/90 – 9/92)
Additional projects involved:

(1) Data Analysis and Synthesis System (DASS): Led the "Data Accession Team" and built up an extensive INO Oceanic Data Library. Major items in the library include in-situ marine observations (CTD, XBT, etc.), satellite-derived remote sensing data (MCSST, GEOSAT SSH, etc.), model forecasts (NOGAPS, etc.), Levitus Climatology, etc. (7/89 – 9/90)
(2) Verification Module (VERMOD): Led the task in formulating the verification schemes in the Experimental Center for Mesoscale Ocean Prediction (ECMOP) system. (7/89 – 9/90)
(3) Led the task in air-sea data sets for SEACOAST (Semi-Enclosed And Coastal Oceanographic & Atmospheric Simulation Technology) project. (10/92 – 1/93)
(4) Global Change: Took part in the preparation for NRL participation in the Global (climate) Change Research Program.

1/85 – 6/89: **Adjunct Assistant Professor**, Dept. of Atmospheric Science, State Univ. of New York at Albany, Albany, NY. (9/87 – 6/89)
Taught ATM450 (Senior/Graduate): *Computer Applications in Atmospheric Sciences.*
Consulted graduate students' thesis and dissertation research.

Research Associate. Coordinated and carried out research topics:
(1) Three-dimensional ageostrophic circulation, ψ vector,
(2) The initiation and evolution of an intensive upper-level front,
(3) An investigation into the forecast failures of National Meteorological Center's operational models (e.g., LFM, NGM) on the dynamics/mechanism of the Trough Merger.
(4) Case studies related to the Experiments on the Rapid Intensification of Cyclones in Atlantic (ERICA) and the Genesis of Atlantic Lows Experiment (GALE) field programs.
(5) Developed many atmospheric analysis packages including vorticity, kinetic energy, and thermodynamic budgets, Q vector analysis, 2- and 3-D frontogenesis, potential vorticity analysis, quasi-geostrophic diagnosis, and boundary influx.

1/81 – 12/84: **Graduate Research Assistant**, Dept. of Meteorology, Texas A&M Univ., College Station, TX.
(1) Carried out the *Dow Chemical Company storm surge forecast* project.
(2) Developed a probabilistic forecasting model of tropical cyclone-generated storm surge and wind for the Freeport Industrial Community, Texas. The model consists of three parts: (i) a bathymetric surge model, (ii) a bay surge model, and (iii) a probabilistic integration program.
(3) Investigated the causes of the bias of the official tropical cyclone forecasts issued by the National Hurricane Center.

Graduate Teaching Assistant. Course titles:
Met. 451 (Junior/Senior): *Fundamentals of Meteorological Analysis,* and
Met. 452 (Senior): *Weather Analysis and Prognosis*

8/78 – 12/80: **Post-Graduate Research Assistant II**, Dept. of Atmospheric Sciences, UCLA.
(1) Investigated the dynamics of ozone transport in the stratosphere.
(2) Participated in the experiments of a Solar Semidiurnal Atmospheric Tides Model.
(3) Investigated the FGGE-observed & GFDL spectral model output cyclone tracks in the southern hemisphere.

9/74 – 8/78: **Recommended-Rank Officer** (civil servant), Taipei Meteorological Center, Civil Aeronautics Administration, Taipei, Taiwan.
Chaired the Committee on the Automation of Meteorological Data Communication.

Forecaster, Programmer. Designed *The procedure of clear-air-turbulence forecast.*
(Concurrently, a graduate student in the Institute of Oceanography, National Taiwan Univ., 9/74–6/76; an adjunct physics teacher, Pei-tow Senior High School, Taipei, 1/78–6/78.)

9/72 – 8/74: **Weather forecaster, Second Lieutenant**, Chia-Yi Air Force Base, Taiwan. (conscription)

7/71 – 6/72: **Undergraduate Research Assistant**, Dept. of Geography & Meteorology, National Taiwan Univ., Taipei, Taiwan.
Designed vertical cross-sections to study the redistribution of kinetic energy of tropical cyclones after passing the Central Mountains of Taiwan.

Research Grants and Contracts:

Lai, C.-C. A. and Z. Huang: Antarctic circumpolar wave and El Niño. Los Alamos Nat'l Lab., Laboratory-Directed R&D program. LDRD/ER-99026. Oct. 1998 – Sept. 2001.

Lai, C.-C. A.: Regional climate and precipitation variation assessment via integrated global and regional coupled ocean-atmosphere models. Los Alamos Nat'l Lab., Laboratory-Directed R&D program. LDRD/IP-98183. Oct. 1997 – Sept. 1998.

Lai, C.-C. A., M. Ghil, K. Ide, and A. W. Robertson: Interannual-to-decadal variability in the coupled ocean-atmospheric climate system over the North Pacific basin and western United States. Univ. of California, Campus-Laboratory Cooperation program. CLC/LANL-UCLA. Nov. 1995 – Oct. 1998.

Lai, C.-C. A., B. Weare, and S.-T. Soong: Coupled ocean-atmospheric mesoscale model studies of water and climate. Univ. of California, CLC program, CLC/LANL-UCD. Nov. 1995 – Oct. 1998.

Lai, C.-C. A.: Coupled ocean-atmosphere model system for studies of interannual-to-decadal climate variability over the North Pacific basin and the precipitation over southwestern United States. Los Alamos Nat'l Lab., Laboratory-Directed R&D program. LDRD/IP-96444. Oct. 1995 – Sept. 1996.

Cooper, D., J. M. Reisner, K. R. Costigan, C.-C. A. Lai: Improved atmospheric transport for risk assessment in complex terrain. Los Alamos Nat'l Lab., LDRD/PD-96. Oct. 1995 – Sept. 1996.

Lai, C.-C. A., D.-S. Ko, L.A. Perkins, R.C. Willems: Data Assimilation and Model Evaluation Experiments. Office of Naval Research, Research Grant No. N00014-92-J-4112. Oct. 1991 – Sept. 1992.

Dietrich, D.E., C.-C. A. Lai, L. Le, R.C. Willems: Semi-Enclosed and Coastal Ocean and Atmospheric Similation Technology (SEACOAST). Office of Naval Research, Research Grant No. N00014-92-J-4109. Oct. 1992 – Sept. 1993.

Lai, C.-C. A., J.A. Leese: Experimental Center for Mesoscale Ocean Prediction (ECMOP). Office of Naval Research, Cooperative Agreement N00014-90-CA-0001. Oct. 1989 – Sept. 1992.

Lai, C.-C. A., L. Le, D.-S. Ko, W.P. Oconnor, R.C. Willems, J.A. Leese: North Atlantic Ocean Prediction System (NAOPS). Office of Naval Research, Numerical Ocean Modeling & Prediction Program, Research contract 061153N-R310300, Oct. 1989 – Sept. 1990, and 0602435N-RM35G90-92, Oct. 1989 – Sept. 1992.

Bosart, L.F., and C.-C. Lai: Intermountain cyclogenesis. National Science Foundation, Research Grant No. ATM-8812345. May 1988 – Apr. 1991.

Bosart, L.F., and C.-C. Lai: GALE project synoptic and mesoscale case studies. National Science Foundation, Research Grant No. ATM-8811106. June 1988 – May 1991.

Bosart, L.F., and C.-C. Lai: Case studies of explosive oceanic cyclogenesis (ERICA Project). Office of Naval Research, Research Contract No. NAVY-320-6485A. Feb. 1987 – Feb. 1988.

Bosart, L.F., and C.-C. Lai: Synoptic and subsynoptic scale diagnostic studies of tropical convective systems in weakly baroclinic environments. National Oceanic and Atmospheric Administration, Research Contract No. NOAA-320-6423A. Sept. 1985 – Mar. 1988.

Bosart, L.F., and C.-C. Lai: Synoptic and mesoscale studies of weather circulations conditioned by orography. National Science Foundation, Research Grant No. ATM-8417643, (NSF-320-1117B). Apr. 1985 – Sept. 1988.

Bosart, L.F., and C.-C. Lai: Case studies of cyclogenesis and frontogenesis in the Carolinas as part of the core effort for the East Coast Cyclone Project (GALE). National Science Foundation, Research Grant No. ATM-8311106, (NSF-320-1386A) May 1984 – Nov. 1988.

Thompson, A.H., and C.-C. Lai: Probabilistic forecasting model for coastal storm surge. Dow Chemical Comapny, Research Contract No. 55114. Feb. 1982 – Aug. 1984.

Lai, C.-C., Y.-C. Ho, and H. Hsiao: Automation of meteorological data communication. Civil Aeronautics Administration, Research Grant. Jan. 1977 – Jan. 1978.

Awards, Honors, Professional Societies & Activities:

Los Alamos National Laboratory, Los Alamos Achievement Award, 1997.
Listed in *Who's Who in America,* Science & Technology, 1997.
National Research Council, Research Associateship Award, 1984. Didn't accept it due to visa held.
Dean's award to the highest distinctive students on graduation, National Taiwan Univ., 1976.
Award to the excellent student in sciences on Edison's Anniversary, 1968.

Elected to the Chi Epsilon Pi ($\chi\epsilon\pi$) Meteorological Honor Society, 1982.
Elected to the Sigma Xi Society, 1982. Inactive now.
Elected to the Phi Tau Phi ($\phi\tau\phi$) Scholastic Honor Society, 1978.
Member, American Geophysical Union (AGU).
Member, American Meteorological Society (AMS).
Member, AMS Board on Women and Minorities, 1994 – 1997.
Member, The Oceanography Society.
Founder, National Management Association, Rio Grande Chapter, 1995.
President, Los Alamos Chinese Cultural Association, 1994.
Founder and President, UCLA Chinese Echo club, 1979.
Founder and President, Meteorological Student Society of the National Taiwan Univ., 1971.
Den Leader, American Cub Scouts, 1989-1991.

Consultancies:

Consultant to the Director General, Central Weather Bureau, Taiwan, on the development of Marine Meteorology R & D Program. 1990 – 1991.

Consultant to the Dept. of Meteorology, Texas A&M Univ. on the upgrade of the Dow Chemical Company Hurricane Surge Model, 1987.

Graduate student consultant to the Dow Chemical Company on the implementation of Hurricane Surge Forecast Model, 1983-84.

Journal Publications:

Chang, K-I., K. Ide, M. Ghil, and C.-C. A. Lai, 2000: Continental shelf effects on the barotropic double-gyre ocean circulation. (in preparation)

Huang, Z., J.-B. Ahn, B. C. Weare, C.-C. A. Lai, and S.-T. Soong, 2000: The impact of regional scale air-sea interaction on 1996 - 1997 New Year's storm. *Mon. Wea. Rev.,* (submitted)

Huang, Z., and C.-C. A. Lai, 2000: Multidecadal variations of Monsoon precipitation in the southwestern United States between 1895 and 1996. *J. Climate,* (submitted)

Chang, K-I., M. Ghil, K. Ide, and C.-C. A. Lai, 2000: Transition to aperiodic variability in a wind-driven double-gyre circulation model. *J. Phys. Oceanogr.* (in press)

Chu, SP., L. A. McNair, S. Elliott, C.-C. A. Lai, O. A. Hurricane, R. P. Turco, and R. C. Dugdale, 1999: Ecodynamics and dissolved gas chemistry routines for ocean circulation models. *Computers and Chemistry,* **23 #5**, 447 – 467.

Elliott, S., D. R. Blake, R. A. Duce, C.-C. A. Lai, I. McCreary, L. A. McNair, F. S. Rowland, A. G. Russell, G. E. Streit, R. P. Turco, 1997: Motorization of China implies changes in Pacific air chemistry and primary production. *Geophys. Res. Letter,* **24**, 2671 – 2674.

Loughe, A.F., C.-C. Lai, and D. Keyser, 1995: A technique for diagnosing three-dimensional ageostrophic circulations in baroclinic disturbances on limited-area domains. *Monthly Weather Review,* **123**, 1476 – 1504.

Bosart, L.F., C.-C. Lai, and E. Rogers, 1995: Incipient explosive marine cyclogenesis: Coastal development. *Tellus*, **47A,** 1–29.

Willems, R.C., S.M. Glenn, M.F. Crowley, P. Malanotte-Rizzoli, R.E. Young, T. Ezer, G.L. Mellor, H.G. Arango, A.R. Robinson, and C.-C. A. Lai, 1994: Experiment evaluates ocean models and data assimilation in the Gulf Stream. *EOS,* Transactions, American Geophysical Union. **75,** 34, 385-394.

Lai, C.-C. A., W. Qian, and S. Glenn, 1994: Data Assimilation and Model Evaluation Experiments data sets. *Bulletin of American Meteorological Society*, **75,** 793–808.

Lai, C.-C., 1992: Probabilistic forecast of hurricane-generated storm surge with dynamic-statistical approach. *Marine Technology Society Journal.* **26,** 33–43.

Bosart, L.F., C.-C. Lai, and R.A. Weisman, 1992: A case study of heavy rainfall associated with weak cyclogenesis in the northwest Gulf of Mexico. *Monthly Weather Review,* **120,** 2469–2500.

Sanders, F., L.F. Bosart, and C.-C. Lai, 1991: Initiation and evolution of an intense upper-level front. *Monthly Weather Review,* **119,** 1337–1367.

Lai, C.-C., 1988: Comments on "The diagnosis of synoptic-scale vertical motion in an operational environment." *Weather and Forecasting, 3,* 343–347.

Lai, C.-C., and L.F. Bosart, 1988: A case study of trough merger in split westerly flow. *Monthly Weather Review,* **116,** 1838–1856.

Branick, M.L., F. Vitale, C.-C. Lai, and L.F. Bosart, 1988: The synoptic and subsynoptic structure of a long-lived severe convective system. *Monthly Weather Review,* **116,** 1335–1370.

Lai, C.-C., 1984: A probabilistic forecasting model of tropical cyclone-generated storm surge for a straight coastline. Dissertation. Dept. of Meteorology, Texas A&M Univ., August, 1984. xxiii + 151 pp.

Lai, C.-C., 1976: The influence of the sea water temperature and the atmospheric tides on the genesis and intensification of tropical cyclones over the Northwest Pacific. Thesis. Institute of Oceanography, National Taiwan Univ., June, 1976. 60 pp.

Book Contribution & Book Review:

Lai, C.-C., 1996: Review of "Resource Management Information Systems: Process and Practice", K. R. McCloy, Taylor & Francis Publisher, 415 pp. *Bulletin of American Meteorological Society,* **77,** 136-137.

Lai, C.-C., 1994: Review of "Environmental modeling with GIS", M.F. Goodchild, B.O. Parks, and L.T. Steyaert (eds.), Oxford University Press, 488 pp. *Bulletin of American Meteorological Society,* **75,** 1872–1874.

Lai, C.-C., 1992: Probabilistic forecast of hurricane-generated storm surge with dynamic-statistical approach. *Oceanic and Atmospheric Nowcasting and Forecasting,* D.L. Durham and J.K. Lewis (eds.), Marine Technology Society. p. 33-43.

Technical Reports:

Chang, K.-I., M. Ghil, K. Ide, and C. A. Lai, 1999: Transition to aperiodic variability in a wind-driven double-gyre circulation model. Los Alamos National Lab., LA-UR-99-4512.

Lai, C.-C. A., 1997: Coupled ocean-atmosphere model system for studies of interannual-to -decadal climate variability over the North Pacific basin and the precipitation over Southwestern United States. Los Alamos National Lab., LA-UR-97-3367. 10 pp.

Ghil, M., K. Ide, A. Robertson, C. A. Lai, K.-I. Chang, and Z. Pan, 1996: Interannual- to-decadal variability in the coupled ocean-atmosphere climate system over the North Pacific Basin and Western United States. Modeling and Prediction of Water Resources in California and the Western United States Project, CLC Program 1995-1996 Report. Los Alamos National Lab. p 5 - 6.

Weare, B., S.-T. Soong, C. A. Lai, and J.-B. Ahn, 1996: Coupled ocean-atmosphere mesoscale model studies of weather and climate. Modeling and Prediction of Water Resources in California and the Western United States Project, CLC Program 1995-1996 Report. Los Alamos National Lab. p 29 - 30.

Mechoso, C. R., R. C. Malone, C. A. Lai, et al., 1996: Global Climate Modeling. The CASA gigabit network testbed, Final Report, CACR-123. July 1996. p. 65–89.

Lai, C.-C. A., and R. C. Malone, 1994: Coupling LANL POP ocean GCM with UCLA atmospheric GCM across the CASA-Gigabit network. LA-UR, 20 pp.

Lai, C.-C. A., and W. Qian, 1993: Preparation of Data Assimilation and Model Evaluation Experiments data sets. Ctr. for Ocean & Atmospheric Modeling/USM TR-1/94, xi + 128 pp.

Arango, H., C.-C. A. Lai, and collaborators, 1993: Synoptic evolution of Gulf Stream meanders and rings, OTIS initialization and forecast. *A movie of time series maps at 200 m level.* Ctr. for Earth & Planetary Studies, Harvard University, Cambridge, MA.

Lai, C.-C.A., D.-S. Ko, L. Perkins, W. Qian, R. Willems, G. Mellor, T. Ezer, A.R. Robinson, H.G. Arango, S. Glenn, P. Rizzoli, R.E. Young, and D. Fox, 1992: DAMÉE-GSR Phase 0: OTIS initialized one-week forecasts. Ctr. for Ocean & Atmospheric Modeling/USM TR-1/93, 69 pp.

Lai, C.-C. A., 1992: A description of Gulf Stream system in DAMEÉ Phase II case: 30 May – 4 July, 1988. *DAMÉE News & Notes,* I(10), 14-15.

Lai, C.-C. A., 1991: FLEXCAST OTIS-initialized forecast, DAMÉE Phase 0 report. *DAMÉE News & Notes,* Vol. I, No. 6.

Lai, C.-C. A., 1991: Evaluation measures for Gulf Stream forecasts. *DAMÉE News & Notes,* I(5), 2-18.

Lai, C.-C. A., 1990: Progress on data accession and preparation of user's guides. SP-3, Institute for Naval Oceanography. ii + 44 pp.

Lai, C.-C., and A.H. Thompson, 1985: Physical and mathematical description of the Dow Chemical Company Hurricane Surge Forecast Model. *DCC-TR,* Dept. of Meteorology, Texas A&M Univ., iv + 53 pp.

Lai, C.-C., and A.H. Thompson, 1984: Verification of hurricane surge forecast model against the observation made during Hurricane Alicia 1983. *DCC-TR,* Dept. of Meteorology, Texas A&M Univ., Research Project 55114. 39 pp.

Thompson, A.H., and C.-C. Lai, 1983: Manual of hurricane surge forecast model. *DCC-TR,* Dept. of Meteorology, Texas A&M Univ., Research Project 55114. viii + 141 pp.

Lai, C.-C., 1983: Texas Division Hurricane Surge Forecast Program user's guide. *DCC-TR,* Dept. of Meteorology, Texas A&M Univ., Research Project 55114. ii + 31 pp.

Chang, L.-S., C.-C. Lai, and Y.-C. Ho, 1978: An investigation into the contemporary clear-air-turbulence forecast methods. *CAA Tech. Rep.,* Taipei Meteorological Center, Civil Aeronautics Administration, Taiwan. 26 pp.

Conference, Workshop proceedings & Invited presentations:

Lai, C.-C.A., and Z. Huang, 2001: Variety of El Niño and La Niña in the 20th century. 12th Symposium on Global Change Studies and Climate Variations. Jan. 14 - 19, 2001. Albuquerque, NM.

Lai, C.-C. A., and Z. Huang, 2000: Variety of El Niño and La Niña. 2000 Western Pacific Geophysics Meeting, 27 – 30 June 2000. Tokyo, Japan.

Huang, Z., and C.-C. A. Lai, 2000: Possible links between El Niño and Antarctic Circumpolar Wave revealed in NCAR CSM simulation. 6th Conference on Southern Hemisphere Meteorology and Oceanography, 3 – 7 April, 2000. Santiago, Chile.

Elliott, S., SP. Chu, and C.-C. A. Lai, 2000: Biogeochemistry in the Parallel Ocean Program. Ocean Science Meeting, American Geophysical Union. 24 – 28 January, 2000. San Antonio, TX. OS12N-04.

Huang, Z., and C.-C. A. Lai, 1999: Responses of a regional seaice model to synoptic-seasonal atmospheric forcings. Preprint of *5th Conference on Polar Meteorology and Oceanography.* 11 - 15 January, 1999. Dallas, TX.

Lai, C.-C. A., and Z. Huang, 1998: Regional ocean-atmospheric modeling study of coastal oceanic impact on a California winter storm. Western Pacific Geophysics Meeting, 21 - 24 July, 1998. Taipei, Taiwan.

Jones, P. W., R. C. Malone, and C. A. Lai, 1998: The Los Alamos coupled climate model. Proceedings of Second International Workshop on Software Engineering and Code Design in Parallel Meteorological and Oceanographic Applications. Scottsdale, AZ. June 15 – 18, 1998. p. 239 - 247.

Huang, Z., and C. A. Lai, 1998: Multidecadal variability of the Southwestern United States Monsoon precipitation in the past century. Ninth Conference on interaction of the sea and atmosphere, 78th American Meteorological Society Meetings, 11 - 16 January, 1998. Phoenix, AZ.

Huang, Z., and C. A. Lai, 1997: The impact of mesoscale coastal ocean perturbations on Pacific winter storm parade over California. *EOS,* Trans. Am. Geophys. Union. **79,** 46. Fall Meeting, 8 - 12 December, 1997. San Francisco, CA.

Huang, Z., and C. A. Lai, 1997: Decadal-century scale variability of Southwestern United States Monsoon precipitation in the past century. 22nd Annual Climate Diagnostics and Prediction Workshop. Lawrence Berkeley National Lab., Berkeley, CA. Oct. 6 - 10, 1997.

Lai, C.-C., 1996: Comparisons of thermal forcings to the global ocean as revealed by the COADS data and CCM3 and ECHO models. *EOS,* Trans. Am. Geophys. Union. **78**, 46. Fall Meeting, 15 - 19 December, 1996. San Francisco, CA.

Lai, C.-C., 1996: Los Alamos global and regional coupled ocean-atmospheric modeling for climate research. Invited talk, Inter-Americas Institute workshop: Development of a regional climate center for Mexico, Central America and the Caribbean. 18 - 20 September, 1996. San Miguel de Allende, Mexico.

Lai, C.-C., 1996: Multi-decadal global POP $2/3°$resolution simulation with COADS hybrid fluxes forcings. *EOS,* Trans. Am. Geophys. Union, **78**, 6. Ocean Science Meeting, 12 - 16 February, 1996. San Diego, CA.

Lai, C.-C., 1995: Multi-decadal global POP $2/3°$resolution simulations with various fluxes forcings. DOE CHAMMP meeting. 1 – 5 October, 1995. Rockville, MD.

Lai, C.-C., 1994: Peculiar multiyear variations of polar sea-ice coverage. AGU Fall Meetings, 11 - 15 December, 1994. San Francisco, CA.

Lai, C.-C., R.C. Malone, J.F. Morrison, C.R. Mechoso, and J. Spahr,1994: Coupling the LANL and UCLA general circulation models across CASA. Proceedings of the Giga-bit Testbed Maxijam. 2 - 4 November, 1994. Reston, VA. p. 491 – 496.

Lai, C.-C., 1994: Applications of skill measures to Gulf Stream and North Atlantic forecasts. DAMÉE-NAB Meeting. 2 - 3 June, 1994. Monterey, CA.

Lai, C.-C., 1993: Gulf Stream climatology, modeling, data assimilation and evaluation. Univ. of California INCOR meeting, 13 - 14 May, 1993. La Jolla, CA.

Lai, C.-C., 1992: Skills of a climatology-analogy forecasting model for Gulf Stream axis. AGU '92 Fall Meeting, San Francisco, CA, 7 - 11 December, 1992.

Lai, C.-C., and V. Anantharaj, 1992: Gulf Stream climatology and the development of an analogy forecast model. AGU/CGU Joint Spring Meeting, Montreal, Quebec, Canada. 12 - 16 May, 1992.

Lai, C.-C., 1992: On the development of climatology-analogy forecast model for Gulf Stream system. 1992 AGU Ocean Sciences Meeting, New Orleans, LA, 27 - 31 January, 1992.

Loughe, A.F., D. Keyser, and C.-C. Lai, 1992: A technique for presenting three-dimensional vertical circulation: Application to the cold front of 2-3 March, 1972. Fifth conference on mesoscale processes, Atlanta, GA, 5 - 10 January, 1992.

Lai, C.-C., 1991: A proposition of forecast models for ocean fronts. AGU Fall Meetings, San Francisco, CA, 9 - 13 December, 1991.

Qian, W., and C.-C. Lai, 1991: Application of anomaly correlation and pattern correlation to the verification of Gulf Stream forecast. AGU Fall Meetings, San Francisco, CA, 9 - 13 December, 1991.

Lai, C.-C. A., 1991: Probabilistic forecast of tropical cyclone-generated storm surge with dynamic-statistical approach. Proceedings of Marine Technology Society Conference '91, Vol. II, 1225–1235. New Orleans, LA, 10 - 14 November, 1991.

Lai, C.-C., 1991: Use of SYNOP data in the nowcast/forecast verification. SYNOP Workshop, Woods Hole, MA, 3 - 6 September, 1991.

Lai, C.-C., 1991: Evaluation measures for the Gulf Stream forecasts: Application to a simulation model. Presented at Harvard Univ., Center for Earth and Planetary Physics. 10 October, 1991.

Lai, C.-C., 1991: Evaluation measures for Gulf Stream forecasts. 1991 AGU-MSA Spring Meetings, Baltimore, MD, 28 - 31 May, 1991.

Loughe, A.F., C.-C. Lai, and D. Keyser, 1991: A technique for representing three-dimensional vertical circulation: Application to the President's Day storm. Preprint of First International Winter Storm Symposium. New Orleans, LA, 13 - 18 January, 1991.

Lai, C.-C., 1990: An overview of meteorological & oceanographic data, modeling & forecast. Presented at the Central Weather Bureau, Taipei, Taiwan. Sponsored by the Meteorological Society of the Republic of China. 23 July, 1990.

Lai, C.-C., 1990: Initiation and evolution of an intense upper level front. Presented at the National Taiwan Univ., Taipei, Taiwan. 25 July, 1990.

Sanders, F., L.F. Bosart, and C.-C. Lai, 1989: Initiation and evolution of an intense upper-level front. Preprint of the Analysis and Forecasting Conference, American Meteorological Society. Oct. 1989.

Lai, C.-C., 1987: An investigation into the errors of the tropical cyclone forecast. Extended Abstract of the 17th Conference on Hurricanes and Tropical Meteorology, American Meteorological Society, Miami, FL, 7 - 10 April, 1987. p 192-195.

Lai, C.-C., and L.F. Bosart, 1987: Trough phasing: An example of a difficult forecasting problem. Sixth Extratropical Cyclone Workshop, Asilomar Conf. Ctr., Pacific Grove, CA, 16 - 20 February, 1987.

Lai, C.-C., 1984: The threat of storm surge to the southwest coast of Taiwan and the forecast of typhoon. Presented at the Central Weather Bureau, Taipei, Taiwan. 8 September, 1984.

Lai, C.-C., 1984: The probable cause of bias of tropical cyclone forecast. Conference on Aviation Weather and Flight Safety, Civil Aeronautics Administration, Taipei, Taiwan. 4 - 5 September, 1984.

Lai, C.-C., and A.H. Thompson, 1984: A probabilistic forecasting model of hurricane-generated storm surge and wind for a straight coastline. Postprint of Third conference on Meteorology of the Coastal Zone. American Meteorological Society, Miami, FL, 9 - 13 January, 1984. p 48 - 52.

Other Qualifications:

Passed the Air Forces Meteorological Reserve Officer Qualification by the ROC gov. in April, 1972.
Passed the High-Rank Civil Officer Examination by the Examination Yuan, ROC gov. in Oct. 1972.
Passed the Architecture Engineering Qualification by the Examination Yuan, ROC gov. in July 1976.