Robert L. Jacob - Cirriculum Vitae

Address: Mathematics and Computer Science Division
Argonne National Laboratory
9700 S. Cass Ave.
Argonne, IL 60439
(630) 252-2983
fax: (630) 252-5986
jacob@mcs.anl.gov

Personal: Citizenship: USA

Education:

Ph.D. The University of Wisconsin-Madison
Atmospheric Science (Dec 17, 1997)

B.Sc. The University of Texas at Austin
Physics (May 19, 1990)

B.Sc. The University of Texas at Austin
Mathematics (May 19, 1990)

Professional Experience:

Sept 2005 to present	Computational Climate Scientist Mathematics and Computer Science Division Argonne National Laboratory
July 2000 to Sept 2005	Assistant Computational Scientist Mathematics and Computer Science Division Argonne National Laboratory
Aug 1999 to July 2000	Research Associate Department of the Geophysical Sciences The University of Chicago
Jan 1998 to Aug 1999	Research Associate Space Science and Engineering Center The University of Wisconsin-Madison
May 1992 to Dec 1997	Research Assistant Space Science and Engineering Center The University of Wisconsin-Madison
May 1990 to Aug 1991	Computer Programmer/Services Assistant Department of Physics, Center for Relativity University of Texas at Austin

Honors and Awards:
American Meteorological Society/Cray Research Graduate Fellowship, 1991
Sigma Pi Sigma, UT Austin, 1991

Memberships:
American Geophysical Union
Society for Industrial and Applied Mathematics

Publications:

Liu, Z., Y. Liu, L. Wu, and R. Jacob, 2007: "Seasonal and Long Term Atmospheric Responses to Reemerging Nortn Pacific Ocean Variability: A Combined Dynamical and Statistical Assessment," *J. Climate*, **20(6)**, 955-980.

Donnadieu, Y., Y. Godderis, R. Pierrehumbert, G. Dromart, F. Fluteau, and R. Jacob, 2006: "Modelling the primary control of paleogeography on Cretaceous climate," *Earth and Planetary Science Letters*, **248**, 426-437.

Jacob, R., J. Larson, and E. Ong, 2005: "MxN Communication and Parallel Interpolation in CCSM3 Using the Model Coupling Tookit," *Int. J. High Perf. Comp. App.*, **19(3)**, 293-307.

J. Larson, R. Jacob, and E. Ong, 2005: "The Model Coupling Toolkit: A New Fortran90 Toolkit for Building Multi-Physics Parallel Coupled Models," *Int. J. High Perf. Comp. App.*, **19(3)**, 277-292.

A. P. Craig, R. Jacob, B. G. Kauffman, T. Bettge, J. Larson, E. Ong, C. Ding, and H. He, 2005: "Cpl6: The New Extensible High-Performance Parallel Coupler for the Community Climate System Model," *Int. J. High Perf. Comp. App.*, **19(3)**, 309-327.

M. Notaro, Z. Liu, R. Gallimore, S. J. Vavrus, J. E. Kutzbach, I. C. Prentice, R. L. Jacob, 2005: "Simulated and Observed Pre-Industrial to Modern Vegetation and Climate Changes," *J. Climate*,

R. Gallimore, J. E. Kutzbach, R. L. Jacob, 2005: "Coupled Atmosphere-Ocean-Vegetation Simulations for Modern and Mid-Holocene Climates: Role of Extratropical Vegetation Cover Feedbacks," *Climate Dynamics*, **25**, 755-765.

J. Lews, M. Eby, A. Weaver, S. Johnston, R. Jacob 2004: "Global glaciation in the Neoproterozoic: Reconciling previous modelling results", *Geophys. Res. Lett.*, **31(8)**, L08201.

L. Wu, Z. Liu, R. Gallimore, R. Jacob, D. Lee, Y. Zhong, 2003: "Pacific Decadal Variability:

The Tropical Mode and the North Pacific Mode", *J. Climate*, **16(8)**, 1101-1120.

C. Poulsen, A. Gendaszek, R. Jacob, 2003: "Did the rifting of the Atlantic Ocean cause the Cretaceous thermal maximum?", *Geology*, **31(2)**, 115-118.

E. Ong, J. Larson, R. Jacob , 2002: "A Real Application of the Model Coupling Toolkit" *Proc. 2002 International Conference on Computational Science*, eds. P. Sloot, C. J. Tan, J. J. Dongarra, A. Hoekstra, Springer-Verlag.

C. Poulsen, R. Jacob, R. Pierrehumbert, T. Huynh, 2002: "Testing paleogeographic controls on a Neoproterozoic snowball Earth",*Geophys. Res. Lett.*, **29(11)**.

Z. Liu, R. Gallimore, R. Jacob, 2002: "Search for the origins of Pacific decadal climate variability",*Geophys. Res. Lett.*, **29(10)**.

R. Jacob, C. Schafer, I. Foster, M. Tobis and J. Anderson, 2001: "Computational Design and Performance of the Fast Ocean Atmosphere Model." *Proc. 2001 International Conference on Computational Science*, eds. V. N. Alexandrov, J. J. Dongarra, C. J. K. Tan, Springer-Verlag.

J. Larson, R. Jacob, I. Foster, J. Guo, 2001: "The Model Coupling Toolkit" *Proc. 2001 International Conference on Computational Science*, eds. V. N. Alexandrov, J. J. Dongarra, C. J. K. Tan, Springer-Verlag.

C. Poulsen, R. Pierrehumbert, R. Jacob, 2001: "Impact of ocean dynamics on the Neoproterozoic "snowball Earth"", *Geophys. Res. Lett.*, **28(8)**, 1575.

C. Delire, M. Coe, J. Foley, R. Jacob, P. Behling, J. Kutzbach, Z. Liu, and S. Vavrus, 2001: "Simulated response of the atmosphere-ocean system to deforestation in the Indonesian Archipelago." *Geophys. Res. Lett.*, **28(10)**, 2081.

D. Archer, G. Eshel, A. Winguth, W. Broecker, R. Pierrehumbert, M. Tobis, and R. Jacob, 2000: "Atmospheric pCO_2 sensitivity to the biological pump in the ocean." *Global Biogeochemical Cycles*, **14(4)**, 1219-1230.

B. Benson, J. Magnuson, R. Jacob, S. Fuenger, 2000: "Response of lake ice breakup in the Northern Hemisphere to the 1976 interdecadal shift in the North Pacific" *Verh. Inernat. Verein. Limnol.*, **27**, 2770-2774.

Z. Liu, R. Jacob, J. Kutzbach, S. Harrison and J. Anderson, 1999: "Monsoon impact on El Nino in the Early Holocene", PAGES **7(2)**, 16-17

M. Tobis, C. Schafer, I. Foster, R. Jacob and J. Anderson, 1997: "FOAM: Expanding the horizons of climate modeling", *Proceedings of SC97*, San Diego, CA, ACM/IEEE

W. L. Hibbard, J. Anderson, I. Foster, B. E. Paul, R. Jacob, C. Schafer, M.K. Tyree, 1996: "Exploring coupled atmosphere-ocean models using Vis5D", *Int. J. of Supercomputer App.*

and High Performance Computing, **10**, 211.

Robert Jacob and John Anderson, 1992: "DIY massively parallel supercomputer does useful physics",*Computers in Physics*, **6**, 244.