John B. Drake

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Research Interests

Numerical methods and parallel algorithms for climate modeling. Fluid dynamics modeling and the numerical approximation of conservation laws.

Education

Ph.D.	Applied Mathematics	University of Tennessee	1991
M.S.	Applied Mathematics	Purdue University	1979
B.S.	Mathematics	University of Kentucky	1977

Experience

1984 - *Computer Science and Mathematics Division*, Oak Ridge National Laboratory
1979-1984, *Engineering Mechanics Section*, Oak Ridge National Laboratory

Selected Publications

"A Standard Test Set for Numerical Approximations to the Shallow Water Equations on the Sphere", D.L. Williamson, J.B. Drake, J.J. Hack, R. Jakob and P.N. Swarztrauber, J. Comp. Phys. Vol. 102 (1992), pp. 211-224

"Parallel Algorithms for Semi-Lagrangian Transport in Global Atmospheric Circulation Models", J.B. Drake and I.T. Foster and J.G. Michalakes and P.H. Worley, in Parallel Processing for Scientific Computing, SIAM, Feb. 1995, pp. 119-124.

"The Cartesian Method for Solving Partial Differential Equations in Spherical Geometry", P.N. Swarztrauber, D.L. Williamson, J.B. Drake, Dynamics of Oceans and Atmospheres, Vol. 27, pp. 679-706, 1997.

"Statistical Downscaling of the United States Regional Climate from Transient GCM Scenarios", William M. Putman, J.B. Drake and G. Ostrouchov, in the proceedings of the AMS 12th Conference on Applied Climatology, May 2000

"A global semi-Lagrangian spectral model of the shallow water equations with variable resolution", Guo, D.X. and J.B. Drake, J. Comp. Phys. Vol. 206 (2005), pp. 559-577.

"Overview of the Software Desing and Parallell Algorithms of the CCSM", J.B. Drake, P.W. Jones, G.R. Carr, Int. J. High Perf. Comput. Appl., Vol 19, No 3, pp.177-186, 2005

"Performance Portability in the Physical Parameterizations of Community Atmosphere Model", P. H. Worley, J.B. Drake, Int. J. High Perf. Comput. Appl., Vol 19, No 3, pp. 187-201, 2005