Joseph Schoonover

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Education

PhD in Geophysical Fluid Dynamics June 2011 - May 2016
Geophysical Fluid Dynamics Institute

Bachelor of Science in Applied Mathematics August 2008 - May 2011
Florida State University

Research/Work Experience

Associate Scientist II July 2017 - Present
Cooperative Institute for Research in Environmental Sciences

Post-Doctoral Researcher January 2016 - July 2017
Los Alamos National Laboratory

Graduate Research Assistant June 2011 - December 2015
Geophysical Fluid Dynamics Institute

Programming

Languages : Fortran, C/C++, Python
Parallel : OpenACC, CUDA, OpenMP, MPI

Software Development

Spectral Element Libraries in Fortran
(schoonovernumerics.github.io/SELF)

Fast Equilibration of Ocean Tracers Software
(schoonovernumerics.github.io/FEOTS)

Teaching and Outreach

Mentor
BNL GPU Hackathon June 2017
Brookhaven National Laboratory
www.olcf.ornl.gov/training-event/2017-gpu-hackathons

Co-Lead/Mentor
Parallel Computing Summer Research Internship June 2016-July 2017
Los Alamos National Laboratory
parallelcomputing.lanl.gov

Teaching Assistant
Introduction to Oceanography Fall 2011, Fall 2015
Florida State University

Lecturer
Simple Climate Models Fall 2014
Geophysical Fluid Dynamics Institute

Tutor
Math Help Center Fall 2009 - Summer 2011
Florida State University

Publications

[1] D. Banesh, J. Ahrens, F. Samsel J. Schoonover, and B. Hamann. Qualitative and Quantitative Feature Analysis using Computer Vision Algorithms. *SciVis*, (submitted), 2017.

[2] D. Banesh, J. Schoonover, and J. Ahrens. Extracting, Visualizing and Tracking Mesoscale Eddies in Two-dimensional Image Sequences Using Contours and Moments. *Workshop on Visualisation in Environmental Sciences*, (submitted), 2017.

[3] W.K. Dewar, J. Schoonover, T.J. McDougall, and R. Klein. Semi-Compressible Ocean Thermodynamics and Boussinesq Energy Conservation. *Fluids*, 1:1–9, 2016.

[4] W.K. Dewar, J. Schoonover, T.J. McDougall, and W.R. Young. Semi-Compressible Ocean Dynamics. *J. Phys. Oceanogr.*, 45:149–156, 2015.

[5] S. Fogerty, S. Bishnu, Y. Zamora, L. Monroe, S. Poole, M. Lam, J. Schoonover, and R. Robey. Thoughtful precision in mini-apps. *(in preparation)*.

[6] J. Schoonover. The Spectral Element Libraries in Fortran. *J. Open Source Software*, (in preparation), 2017.

[7] J. Schoonover, W.K. Dewar, N. Wienders, and B. Deremble. Local Sensitivities of the Gulf Stream Separation. *J. Phys. Oceanogr.*, 47:353–373, 2017.

[8] J. Schoonover, W.K.Dewar, N. Wienders, J. Gula, J. Molemaker, J.McWilliams, S. Bates, G. Danabasoglu, and S. Yeager. North Atlantic Barotropic Vorticity Balances and the Gulf Stream Separation in Numerical Models. *J. Phys. Oceanogr.*, 46:289–303, 2016.