Biographical sketch: Matthias Morzfeld

Education and Training

- Postdoc, Computational Research Division, Lawrence Berkeley National Lab, since 2011
- Ph.D., Mechanical Engineering, University of California, Berkeley, 2011
- M.Sc., Mechanical Engineering, University of California, Berkeley, 2009
- B.Sc., Mechanical Engineering, Technical University Darmstadt (Germany), 2007

Research and Professional Experience

Professeur Invite, Institute de Physique du Globe de Paris, 03/2013–05/2013. *Description*: Research into the role chaos plays in the reversal statistics of Earth's magnetic field by combing simplified ODE models with advanced Monte Carlo sampling.

Publications

1. A. J. Chorin and M. Morzfeld, Conditions for successful data assimilation, Journal of Geophysical Research - Atmospheres, accepted for publication (2013)
2. E. Atkins, M. Morzfeld, and A. J. Chorin, Implicit particle methods and their connection with variational data assimilation, Monthly Weather Review, accepted for publication (2013)
3. X. Tu, M. Morzfeld, and A. J. Chorin, A survey of implicit particle filters for data assimilation, State-space models and applications in economics and finance, Springer series Statistics and econometrics in finance, accepted for publication (2013)
4. M. Morzfeld and A. J. Chorin, Implicit particle filtering for models with partial noise and an application to geomagnetic data assimilation, Nonlinear Processes in Geophysics 19 (2012) 365-382
5. M. Morzfeld, E. Atkins, X. Tu, and A. J. Chorin, A random map implementation of implicit filters, Journal of Computational Physics 213 (4) (2012), 2049-2066
6. A. J. Chorin, M. Morzfeld, X. Tu, Implicit sampling with application to data assimilation, Chinese Annals of Mathematics 33B(6) (2012) 1-10
7. A. J. Chorin, M. Morzfeld, and X. Tu, Implicit particle filters for data assimilation, Communications in Applied Mathematics and Computational Science 5 (2) (2010) 221-240

Synergetic Activities

- Organizer, Mini-symposium on nonlinear methods for data assimilation, SIAM Meeting on Uncertainty Quantification, Raleigh, NC (2012)
- Organizer, Session on particle methods for data assimilation, American Geophysics Union: General Assembly, San Francisco (2012)
- Reviewer for Monthly Weather Review, Nonlinear Processes in Geophysics, Physica D, Applied Numerical Mathematics

Recent Collaborators - Last 48 Months

E. Atkins (now in industry), A.J. Chorin (UCB/LBNL), D.T. Kawano (Rose-Hulman Institute of Technology), F. Ma (UCB), Robert Miller (OSU, Corvallis), B.N. Parlett (UCB), Y. Spitz (OSU, Corvallis), X. Tu (U. Kansas), Brad Weir (OSU, Corvallis)

Graduate and Postdoctoral Advisors

A.J. Chorin (UCB, postdoctoral), F. Ma (UCB, graduate)

Graduate and Postdoctoral Advisees

None

Journal Co-Editors

None