Biographical sketch: Matthias Morzfeld

Education and Training

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

Research and Professional Experience

- 03/2013–05/2013, Professeur Invite, Institute de Physique du Globe de Paris. 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

- A. J. Chorin and M. Morzfeld, Conditions for successful data assimilation, Journal of Geophysical Research - Atmospheres, accepted for publication (2013)
- 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)
- 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)
- 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
- 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
- A. J. Chorin, M. Morzfeld, X. Tu, Implicit sampling with application to data assimilation, Chinese Annals of Mathematics 33B(6) (2012) 1-10
- 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