



## Theme of the Year 2008 GEOPHYSICAL TURBULENCE PHENOMENA

National Center for Atmospheric Research, Boulder, Colorado

# Workshop on Petascale Computing : Its Impact on Geophysical Modeling and Simulation

5-7 May 2008, NCAR Mesa Laboratory

*The goal of this workshop is to establish a roadmap for most-productive use of petascale computing systems for improving our knowledge of important geophysical dynamical processes. Petascale systems will be available on a five-to-ten year time horizon. The purpose of this meeting is to help the geophysical dynamics community position itself to make the best use of these resources when they become available.*

*Given the large range of length and time scales accessible with such systems, we anticipate significant changes may be required to models, algorithms and analysis methods so that new discoveries will be possible.*

*The workshop is organized by five themes, which explore applications ranging from global-scale, regional-scale, and small-scale dynamical phenomena, and includes coupled dynamics that involve multi-scale processes.*

*There is also emphasis on the realities of using and analyzing results from such large-scale computing systems and on the software and model adaptations required to optimize their use.*

*Because applications vary widely from small-scale process parameterization to global-scale forecasting, we encourage meeting participants to consider one simple unifying question as they anticipate workshop participation.*

*Simply put, that question is:*

**"If you had access to a petascale computing system, what would you do with it?"**

*We anticipate enlightened answers to this question from international experts giving invited talks, from contributed talks and poster presentations, and from round-table and open discussions.*

### Principal Lecturers

- Mark Berliner** Department of Statistics, Ohio State University  
**Eric Chassignet** Center for Ocean Atmospheric Prediction Studies, Florida State University  
**John Clyne** Computational & Information Systems Laboratory (CISL), NCAR  
**Isaac Ginis** Graduate School of Oceanography, University of Rhode Island  
**Philip Jones** Los Alamos National Laboratory  
**Yukio Kaneda** Nagoya University, Japan  
**Shigeo Kida** Kyoto University, Japan  
**Rich Loft** Computational & Information Systems Laboratory (CISL), NCAR  
**Mark Rast** Astrophysical and Planetary Science, University of Colorado  
**Damian Rouson** Scalable Computing Research & Development, Sandia National Laboratories  
**Piotr Smolarkiewicz** Meso and Micro-scale Meteorology and IMAGE, NCAR  
**Roberto Verzicco** Dipartimento di Ingegneria Meccanica e Gestionale, Politecnico di Bari  
**Joe Werne** NorthWest Research Associates, CoRA Division, Boulder  
**John Wyngaard** Meteorology and Geo-Environmental Engineering, Penn State University  
**David Yuen** Department of Geology and Geophysics, University of Minnesota

**Interested participants are invited to register and submit an abstract on-line by April 9, 2008.** Some financial support for travel expenses will be available for graduate students and researchers, who would otherwise be unable to attend the workshop.

For more information, to register and to request financial support for the workshop, please visit the workshop webpage ([www.image.ucar.edu/Workshops/TOY2008/focus2](http://www.image.ucar.edu/Workshops/TOY2008/focus2)) or email to [toy2@mail.ucar.edu](mailto:toy2@mail.ucar.edu)