



Image courtesy of Heimpel et al. (2005)

# Geophysical and Astrophysical Turbulence

October 27 – 31, 2014

**ORGANIZING COMMITTEE:** **Jon Aurnou** (UCLA), **Oliver Bühler** (NYU, Courant Institute of Mathematical Science), **Baylor Fox-Kemper** (Brown University), **Pascale Garaud** (UC Santa Cruz), **Keith Julien** (University of Colorado, Boulder)

## Scientific Overview

This workshop will cover a number of selected topics that are common to Oceanography, Planetary Geophysics, Atmospheric Dynamics and Astrophysics including turbulent convection, turbulence induced by baroclinic instabilities, shear turbulence (both stratified and unstratified), double-diffusive convection, and wave-induced turbulence. In all these cases geophysicists and astrophysicists strive to model the effects of the specific type of turbulence considered on heat, compositional and momentum transport. In many instances progress on common problems has been made in parallel without much interaction between the scientific communities.

This workshop will bring together scientists from different backgrounds to share their most recent results, attempting to bridge the subject-gap, and foster fruitful collaborations.

## Confirmed Speakers

**Jon Aurnou** (University of California, Los Angeles (UCLA)), **Matthew Browning** (University of Exeter), **Oliver Bühler** (New York University), **Michael Calkins** (University of Colorado, Boulder), **Paola Cessi** (Scripps Institution of Oceanography), **Jean-Marc Chomaz** (Laboratoire d'Hydrodynamique (LadHyX)), **Emmanuel Dormy** (Ecole Normale Supérieure), **Raffaele Ferrari** (Massachusetts Institute of Technology), **Baylor Fox-Kemper** (Brown University), **Pascale Garaud** (University of California, Santa Cruz (UC Santa Cruz)), **Ian Grooms** (Courant Institute of Mathematical Sciences), **Celine Guervilly** (University of Leeds), **Keith Julien** (University of Colorado, Boulder), **Hubert Klahr** (Max Planck Institute for Astronomy), **Edgar Knobloch** (University of California, Berkeley (UC Berkeley)), **Michael Le Bars** (Institut de Recherche sur les Phénomènes Hors Equilibre), **Annick Pouquet** (National Center for Atmospheric Research), **Nathaneal Schaeffer** (Observatoire des Sciences de l'Univers de Grenoble), **Leslie Smith** (University of Wisconsin-Madison)

## Long Program Schedule

This workshop is part of the long program *Mathematics of Turbulence*.

- Mathematics of Turbulence Tutorials, September 9-12, 2014
- Workshop 1: Mathematical Analysis of Turbulence, September 29-October 3, 2014
- Workshop 2: Turbulent Transport and Mixing, October 13-17, 2014
- **Workshop 3: Geophysical and Astrophysical Turbulence, October 27-31, 2014**
- Workshop 4: Turbulence in Engineering Applications, November 17-21, 2014
- Culminating Workshop at Lake Arrowhead Conference Center, December 7-12, 2014

## Participation

Additional information about this workshop including links to register and to apply for funding, can be found on the webpage listed below. Encouraging the careers of women and minority mathematicians and scientists is an important component of IPAM's mission, and we welcome their applications.

[www.ipam.ucla.edu/programs/mtws3](http://www.ipam.ucla.edu/programs/mtws3)

