

Rotating Turbulence: Interplay and Separability of Bulk and Boundary Dynamics

Monday January 27, 2025

- 8:00–8:55 *Check-in/Breakfast (hosted by IPAM)*
- 8:55–9:00 *Welcome and Opening Remarks*
- 9:00 *Moderator: Robert Ecke*
- 9:00–9:50 **Jonathan Aurnou** (University of California, Los Angeles (UCLA))
An Overview of the Overviews
- 10:00–10:15 *Break*
- 10:15–11:05 **Rudie Kunnen** (Eindhoven University of Technology)
Confined rotating convection: a laboratory perspective
- 11:15–11:30 *Break*
- 11:30–12:20 **Susanne Horn** (Coventry University)
Simulations of Rotating Convection: Idealised Models of Geophysical and Astrophysical Fluid Dynamics
- 12:30–2:00 *Lunch (on your own)*
- 2:00 *Moderator: Susanne Horn*
- 2:00–2:50 **Alban Pothérat** (Coventry University)
MHD approximations in geophysical rotating convection
- 3:00–3:15 *Break*
- 3:15–4:05 **Krista Soderlund** (University of Texas at Austin)
Rotating Convection in Ocean Worlds of the Outer Solar System
- 4:15–4:30 *Break*
- 4:30–5:30 **Robert Ecke** (Los Alamos National Laboratory)
Public Lecture: Tales of Rotating Thermal Convection
- 5:30–6:30 *Reception (Location: IPAM Lobby)*



Tuesday January 28, 2025

- 8:00–9:00 *Check-in/Breakfast (hosted by IPAM)*
- 9:00 *Moderator: Wanying Kang*
- 9:00–9:50 **Michael Calkins** (University of Colorado Boulder)
Scaling laws and force balances in rotating convection: are they consistent?
- 10:00–10:15 *Break*
- 10:15–11:05 **Daphne Lemasquerier** (University of St Andrews)
Tidal heating and convection in icy moon oceans
- 11:15–11:30 *Break*
- 11:30–12:20 **Adrian van Kan** (University of California, Berkeley)
Bridging the Rossby number gap in rapidly rotating thermal convection
- 12:30–2:30 *Lunch (on your own)*
- 2:30 *Moderator: Rudie Kunnen*
- 2:30–3:20 **Rafa Fuentes** (University of Colorado Boulder)
Rotationally-constrained turbulence in giant planet interiors
- 3:30–3:45 *Break*
- 3:45–4:35 **Basile Gallet** (CEA - Saclay)
Rapidly rotating radiatively driven convection: experimental and numerical validation of the 'geostrophic turbulence' scaling predictions
- 4:45–5:00 *Lightning Poster Session*
- 5:00–6:00 *Poster Session & Reception (Hosted by IPAM)*

Wednesday January 29, 2025

- 8:00–9:00 *Check-in/Breakfast (hosted by IPAM)*
- 9:00 *Moderator: Hao Cao*
- 9:00–9:50 **Nicholas Featherstone** (Southwest Research Institute)
Perspectives on the Rotating Solar Convection Zone
- 10:00–10:15 *Break*
- 10:15–11:05 **Wanying Kang** (Massachusetts Institute of Technology)
Interaction between a shear boundary layer and internal gravity waves
- 11:15–11:30 *Break*

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- 11:30–12:20 **Edgar Knobloch** (University of California, Berkeley (UC Berkeley))
Wall modes
- 12:30–12:40 *Group Photo*
- 12:40–2:30 *Lunch (on your own)*
- 2:30 *Moderator: Alban Potherat*
- 2:30–3:20 **Tao Cai** (Macau University of Science and Technology)
The origin and dynamics of vortex crystals in Jupiter's Poles
- 3:30–4:00 *Break*
- 4:00–4:50 **Seth Putterman** (University of California, Los Angeles (UCLA))
An Acoustically Controlled Steady State Desk Top Plasma for Studying Thermal Convection in a Central Force Field with Rotation and Pulsating Motion with Mach Numbers Matching Cepheids

Thursday January 30, 2025

- 8:00–9:00 *Check-in/Breakfast (hosted by IPAM)*
- 9:00 *Moderator: Michael Le Bars*
- 9:00–9:50 **Robert Ecke** (Los Alamos National Laboratory)
Wall modes in rotating convection - Where do we stand?
- 10:00–10:15 *Break*
- 10:15–11:05 **Paula Wulff** (University of California, Los Angeles (UCLA))
Driving and quenching of zonal flows on gas giants
- 11:15–11:30 *Break*
- 11:30–12:20 **Keaton Burns** (Massachusetts Institute of Technology)
Rotating convection at extreme parameters on a logarithmic Fourier lattice
- 12:30–2:30 *Lunch (on your own)*
- 2:30 *Moderator: Daphné Lemasquerier*
- 2:30–3:20 **Simon Cabanes** (Institut de Physique du Globe de Paris (IPGP))
Formation of zonal jets in the subsurface oceans of the Jovian and Saturnian moons
- 3:30–4:00 *Break*
- 4:00–4:50 **Boris Galperin** (University of South Florida St. Petersburg)
Jupiter on Earth, or Turbulence of Tropical Cyclones: from Peristrophic to Zonostrophic

Friday January 31, 2025

- 8:00–9:00 *Check-in/Breakfast (hosted by IPAM)*
- 9:00 *Moderator: Krista Soderlund*
- 9:00–9:50 **Daniel Lecoanet** (Northwestern University)
Internal wave generation by rotating convection
- 10:00–10:15 *Break*
- 10:15–11:05 **Michael Le Bars** (Institut de Recherche sur les Phénomènes Hors Equilibre)
Interplay of Boundary and Bulk Dynamics in Rotating Turbulence Driven by Libration
- 11:15–11:30 *Break*
- 11:30–12:20 **Hao Cao** (University of California, Los Angeles (UCLA))
Giant Planet Interior Dynamics: Recent Progress and Open Questions
- 12:30–2:30 *Lunch (on your own)*
- 2:30 *Moderator: Jon Aurnou*
- 2:30–3:20 **Loren Matilsky** (University of California, Santa Cruz)
The solar dynamo may confine the tachocline and cause rigid shellular rotation at all depths
- 3:30–4:00 *Break*
- 4:00–4:50 **Frank Stefani** (Helmholtz-Zentrum Dresden-Rossendorf)
Harmonically forced and synchronized dynamos: theory and experiments

