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*