

Meeting « frontiers in planetary core dynamics »

Autrans, 17-19/05/2017

PROGRAM

- **oral presentations are given a 30' slot, with a maximum of 20' for the talk and 10' reserved for discussions**
- **all posters will be displayed over the entire meeting**

WEDNESDAY

12.30 : LUNCH

experiments

14h-15h : oral session – chairman Thierry Alboussière

- Simon Cabanes (Marseille) : Rotating turbulent flows to investigate gas giants
- Fabian Burmann (Zurich) : Effects of topography on rotating flows

15h-16h30 : Poster session (+ coffee)

- Raul Avalos (Mexico) : Homopolar disc dynamo experiment with sliding liquid-metal contacts
- Yannick Ponty (Nice) : Ferro-enhanced turbulent dynamo
- Zahia Tigrine (Grenoble) : Torsional Alfvén waves in a dipolar magnetic field
- Sylvie Su (Grenoble) : Detection of zonal flows in the rotating sphere ZoRo: preliminary results

16h30-17h30 : oral session – chairman David Cébron

- Rémy Menaut (Lyon) : HyperG - a compressible convection experiment
- Sebastien Merkel (Lille) : Inner core anisotropy - what does this tell us about iron in the core?

17h30 : Discussion about experiments – lead Thierry Alboussière

19h30 : DINNER

THURSDAY

numerical simulations

8h30-10h : oral session – chairman Yannick Ponty

- Emmanuel Dormy (ENS Paris) : Numerical models and the Geodynamo: a 20 yrs story
- Chris Jones (Univ. Leeds) : Magnetic Rossby waves in spherical dynamo simulations
- Mathieu Bouffard (LPG Nantes / ENS Lyon) : Thermochemical convection in the outer core and stratification below the CMB

10h-11h : poster session (+ coffee)

- Thierry Alboussière (Lyon) : Entropy balance of full/anelastic convection
- Renaud Deguen (Lyon) : Double-diffusive inner core convective translation
- Leo Echeverria (Zurich) : Precessional-convective instabilities in a spherical system
- Thomas Gastine (IPG Paris) : Scaling regimes in spherical shell rotating convection

- Andy Jackson (Zurich) : Taylor state dynamos found by optimal control: axisymmetric examples
- Nicolo Lardelli (Zurich) : Understanding torque states in Spherical Couette experiments
- Jiawen Luo (Zurich) : Optimal Laminar Kinematic Dynamo in a Sphere
- Philippe Marti (Zurich) : A strategy to move from asymptotics to DNS at low Ekman number ($E < 1e-7$) for RRBC in a Cartesian geometry
- Nathanael Schaeffer (Grenoble) : Exploring planetary core dynamics with the SINGE and XSHELLS codes
- Franck Plunian (Grenoble) : Helicity driven turbulence

11h-12h : oral session – chairman Andy Jackson

- Julien Aubert (IPG Paris) : Spherical convective dynamos in the rapidly rotating asymptotic regime
- Jérôme Noir (ETH Zurich) : QG model of thermal convection with CMB topography

12h : Discussion about numerical simulations – lead Andy Jackson

12h30-16h : PICNIC & WALK

Geomagnetic data

16h-17h : poster session (+ tea)

- David Gubbins (Leeds) : Separating Crust and Core Magnetic Fields
- Phil Livermore (Leeds) : Jets in Earth's core
- Magnus Hammer (Copenhagen) : Local Averages of the Core-mantle Boundary Magnetic Field from Swarm and CHAMP Satellite Observations
- Sam Greenwood (Leeds) : Visualisations of Torsional Wave Data
- Gabrielle Hellio (Grenoble) : COV-ARCH, a new geomagnetic field model for the Holocene
- Vincent Lesur (IPG Paris) : On the frequency spectra of the core magnetic field Gauss coefficients
- Maurits Metsman (Leeds) : The reversed- and normal-flux contributions to axial dipole decay for 1880-2015
- Diana Saturnino (Copenhagen): Ionospheric magnetic signals during conjunctions between ground based and Swarm Alpha and Charlie magnetic observations
- Nicolas Gillet (Grenoble) : transient core flows from satellite data

17h-18h30 : oral session – chairman David Gubbins

- Olivier Barrois (Grenoble) : Reanalysis of satellite and ground observatories data using stochastic Kalman Filter
- Sabrina Sanchez (IPG Paris) : Insights into core dynamics through geomagnetic data assimilation
- Chris Finlay (Copenhagen) : Inversion for quasi-geostrophic modes of core flow

18h30 : Discussion about geomagnetic data analysis – lead David Gubbins

19h30 : 20 YEARS DINNER

FRIDAY

Planets and stars

8h30-9h30 : oral session – chairman Alex Fournier

- Céline Guervilly (Newcastle) : Jets vs large-scale vortices in rotating convection
- Steve Tobias (Leeds) : Balances and Asymptotics in the Geodynamo (and Planetary Dynamos)

9h30-10h30 : poster session (+ coffee)

- Alex Fournier (IPGP) : Power-based scaling laws for planetary dynamos: An updated database and a reassessment
- Mouloud Kessar (Leeds) : On the influence of stratification on mesogranulation
- J  r  mie Vidal (Grenoble) : Tidal dynamos in stratified fluids
- Philippe Cardin (Grenoble) : Subcriticality of thermal convection in rapidly rotating spheres
- David Cebron (Grenoble) : Precession-driven flows and dynamos in spheres

10h30-11h30 : oral session

- Erwan Th  bault (Nantes) : A time-averaged regional model of the Hermean magnetic field
- Jenny Wong (Leeds) : A slurry model of two-component convection at the base of Earth's outer core

11h30 : Discussion about planets and stars – lead Alex Fournier

12h30 : LUNCH