



COLLÈGE
DE FRANCE
1530

CHAIRE DE PHYSIQUE DE L'INTÉRIEUR DE LA TERRE

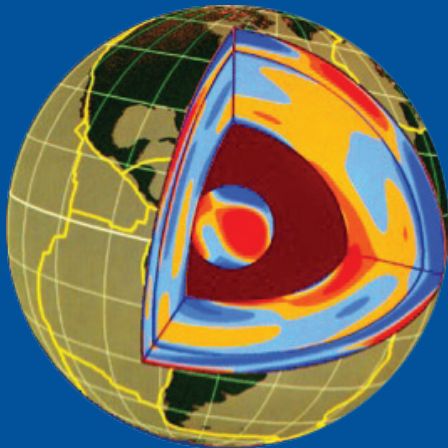
Année académique 2016-2017

Pr Barbara ROMANOWICZ

Flow in the deep Earth

Colloque en anglais - Workshop in English
organisé avec Patrick Cordier, Univ. de Lille

Jeudi 1^{er} et vendredi 2 décembre 2016
Amphithéâtre Maurice Halbwachs



Thursday, December 1st, 2016

09h00 Introduction Barbara Romanowicz, *Collège de France*

Session 1: Global mantle flow: then and now

Chair: Manuel Moreira, *IPG, Paris*

09h05 Global reconstructions of Eocene mantle flow
Peter Bunge, *University of Munich*

09h40 Mantle thermodynamics and Convection: layering and stratification during thermal evolution
Carolina Lithgow-Bertelloni, *University College London*

10h15 Dynamic feedbacks between mantle flow and global tectonics
Nicolas Coltice, *ENS Lyon and University Lyon 1*

10h50 Coffee Break

Session 2: Plumes and slabs: mostly slabs

Chair: Claudio Faccenna, *Universite Roma 3*

11h20 Dynamic modelling of subducting slab interaction with transition zone
Huw Davies, *Cardiff University*

11h55 Slabs, plumes and their interaction: new insights from global anisotropy tomography
Ana Ferreira, *University College London*

12h30 Lunch

Session 3: Plumes and slabs: mostly plumes

Chair: Angela Limare, *IPG, Paris*

14h00 Intertwined evolution of piles, plumes and slabs in the deep mantle
Anne Davaille, *University Paris Sud*

14h35 The flow of viscous heterogeneities in mantle plumes
Cinzia Farnetani, *IPG, Paris*

15h10 The Fine Geochemical Structure of the Hawaiian Mantle Plume: relation to the Earth's Deep Mantle
Dominique Weis, *University of British Columbia*

15h45 Coffee Break

Session 4: Upper mantle deformation

Chair: Sylvie Demouchy, *Universite de Montpellier*

16h15 The influence of water on rheology and seismic properties of olivine
Ulrich Faul, *MIT*

16h50 Deformations associated with megaeearthquakes: rheology of the asthenosphere
Luce Fleitout, *ENS, Paris*

17h15 Poster Session

Friday December 2nd, 2016

Session 5: Lower mantle deformation: constraints from mineral physics

Chair: Fabio Cammarano, *Università Roma 3*

09h00 Experimental studies on plastic properties of minerals under the deep mantle conditions
Shun Karato, *Yale University*

09h35 What numerical modeling tells us about dislocation creep in Earth mantle
Philippe Carrez, *University de Lille*

10h10 Flow and anisotropy in the mantle: bridging the gap between the crystal and geodynamic scales
Andrea Tommasi, *University de Montpellier*

10h45 Coffee Break

Session 6: Lower mantle deformation: constraints from seismology

Chair: Wim Spakman, *Utrecht University*

11h15 Observations of dynamics in the lowermost mantle
Sanne Cottaar, *University of Cambridge*

11h50 'Sharp sides' in mantle convection: seismic multipathing in thermal and thermochemical models
Andy Nowacki, *University of Leeds*

12h30 Lunch

Session 7: Upper mantle: seismic observations

Chair: Valerie Maupin, *University of Oslo*

14h00 Anisotropy in the upper mantle from surface waves
Eric Debayle, *ENS, Lyon and University Lyon 1*

14h35 Oceanic and continental plates as seen by seismic anisotropy
Jean-Paul Montagner, *IPG, Paris*

15h10 Coffee Break

Session 8: Iron in the deep earth

Chair: Daniele Antonangeli, *CNRS, Sorbonne Universités*

15h50 Iron flow in Earth's molten silicate proto-mantle
Henri Samuel, *IRAP, Toulouse*

16h25 Anisotropy and history of the Earth's inner core: forward models and input from mineralogy
Sébastien Merkel, *University de Lille*

17h00 Panel Discussion

Edouard Kaminski, *IPG, Paris*
Christine Thomas, *University of Muenster*
Jeannot Trampert, *University of Utrecht*
James Wookey, *University of Bristol*
Alessandro Forte, *University of Florida*

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