



COLLÈGE
DE FRANCE
1530

CHAIRE DE PHYSIQUE DE L'INTÉRIEUR DE LA TERRE

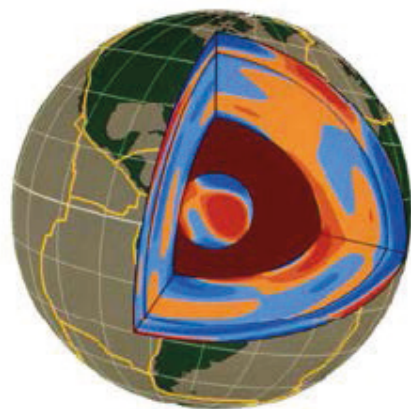
Année académique 2019-2020

Pr Barbara ROMANOWICZ

Global Scale Seismic Imaging and Dynamics of the Earth's Mantle

Colloque en anglais - Workshop in English
co-organised with Nicolas Coltice, ENS de Paris

Thursday October 7 and Friday October 8, 2021



Thursday, October 7th, 2021

09h00 Introduction Barbara Romanowicz, Collège de France

Session 1 : Global Seismic Structure

Chair : Piero Poli, University of Grenoble, France

09h05 Insights into mantle dynamics and thermo-chemical structure
through joint inversions of seismic and geodynamic data
Stephen Grand, University of Texas, Austin, USA

09h40 Global seismic tomography using SOLA-Backus-Gilbert Inversion—

Christophe Zaroli, University of Strasbourg, France

10h15 Deciphering mantle dynamics using global seismic imaging

Stephanie Durand, ENS Lyon, France

10h50 Coffee Break

Session 2 : Global structure: links with dynamics

Chair : Claudio Faccenna, University Roma 3, Italy

11h20 Links between imaged mantle structure and dynamics

Thorsten Becker, University of Texas, Austin, USA

11h55 Dynamics and structure of the deep mantle

Paul Tackley, ETH Zurich, Switzerland

12h30 Lunch break

Session 3 : Upper mantle and tectonics

Chair : Eléonore Stutzmann, IPG, Paris

14h00 Anisotropic Imaging of the mantle: application to oceanic and
continental LAB

Jean-Paul Montagner, IPG Paris

14h35 Chasing the lithosphere-asthenosphere transition
in dynamical models of the Earth's mantle

Fanny Garel, University of Montpellier, France

15h10 Coffee Break

Session 4 : From seismograms to rock physics

chair : Nathalie Bolfan-Casanova, Univ. of Clermont-Ferrand, France

15h40 Earth's mantle seismic properties from laboratory experiments

Hauke Marquardt, Oxford University, U. K.

16h15 Phase transitions in the lowermost mantle: effect on microstructures
and seismic observables

Sébastien Merkel, University of Lille, France

17h00 Poster Session

Friday, October 8th, 2021

Session 5 : Flow beneath the plates

Chair : Thomas Bodin, ENS Lyon, France

09h00 Dynamic Topography

Bernhardt Steinberger, GFZ, Potsdam, Germany

09h35 Medium-scale Upper Mantle Seismic Velocity and Mass
structure below ocean basins

Isabelle Panet, IPG, Paris

10h10 Mapping global scale flow patterns with seismic anisotropy

Ana Ferreira, University College London

10h45 Coffee Break

Session 6 : Deformation in the mantle

Chair : Julien Siebert, IPG, Paris

11h15 Influence of mantle complex rheology on lower mantle
dynamics

Anne Davaille, University of Paris-Saclay, France

11h50 Investigating deformation in the mantle through seismological
observations

Christine Thomas, University of Muenster, Germany

12h30 Lunch break

Session 7 : Deep mantle, upwellings and plumes

Chair : Angela Limare, IPG, Paris

14h00 Lowermost mantle structure as seen by core-diffracted P waves

Karin Sigloch, CNRS Géoazur, Univ. Côte d'Azur, France

14h35 Mantle plumes as probes into the composition of Earth's interior:
Hawaii vs all others

Dominique Weis, Univ. of British Columbia, Canada

15h10 Mantle plume geodynamics: insights from numerical experiments

Maelis Arnould, University Lyon 1, France

15h45 Coffee Break

Session 8 : Dynamics and Composition

Chair : Stéphane Labrosse, ENS Lyon, France

16h15 The distribution of primordial and recycled mantle
heterogeneity through time: insight from geodynamic modeling

Maxim Ballmer University College, London

16h50 The nature of chemical heterogeneities preserved in the
deep mantle seen from geochemistry

Maud Boyet, University of Clermont-Ferrand, France

17h30 Panel Discussion

With : James Badro (IPG, Paris), Catherine Chauvel (IPG, Paris),
Saskia Goes (Imperial College, London), Laurent Jolivet (Sorbonne
Université, Paris), Hans-Peter Bunge (Univ. of Munich)

Thomas Römer

Administrateur du Collège de France