

## CHAIRE DE PHYSIQUE DE L'INTÉRIEUR DE LA TERRE

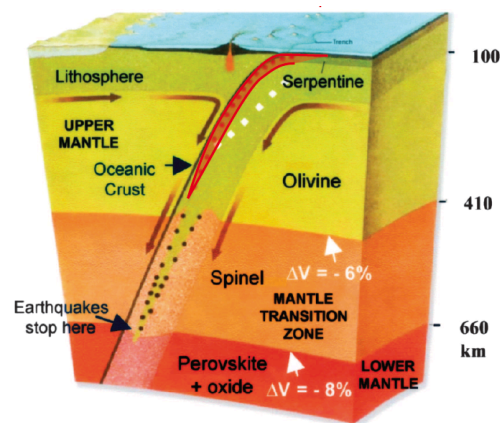
Année académique 2018-2019

Pr Barbara ROMANOWICZ

# Intermediate and Deep Earthquakes : Observation and Modeling

Colloque en anglais - Workshop in English  
co-organised with Alexandre Schubnel, ENS de Paris

Monday 19 November and Tuesday 20 November 2018



## Monday, November 19<sup>th</sup>, 2018

09h00 Introduction Barbara Romanowicz, *Collège de France*

### Session 1 : Deep Focus Earthquake Sources

Chair : Martin VALLÉE, *IPG, Paris*

09h05 Deep earthquakes and their surrounding structure as inferred from regional seismic waves

Keiko KUGE, *Kyoto University, Japan*

09h40 Interferometric imaging of the Metastable Olivine Wedge and a dual-mechanism hypothesis for deep earthquakes

Zhongwen ZHAN, *Caltech, USA*

10h15 Details of the pre-seismic and post-seismic phases of the 2015 Ogasawara deep-focus earthquake

Blandine GARDONIO, *ENS, Paris*

10h50 Coffee Break

### Session 2 : Intermediate and isolated deep earthquake sources

Chair : Piero POLI, *ISTerre, Grenoble*

11h20 Seismological constraints on the mechanism(s) responsible for intermediate-depth earthquake

German PRIETO, *Univ. Nacional de Colombia, Colombia*

11h55 Deep Moonquakes, Isolated Deep Earthquakes, and Deep Earthquakes NOT in Subduction Zones

Cliff FROHLICH, *Univ. of Texas, USA*

12h30 Lunch break

### Session 3 : Pressure, temperature and fluid environment

Chair : Patrick CORDIER, *Univ. of Lille*

14h00 Fluids and earthquakes in the forearc region of subduction zones

Bruno REYNARD, *ENS, Lyon*

14h35 Dehydration embrittlement at high pressure

Nicolas BRANTUT, *Univ. College, London, UK*

15h10 Coffee Break

### Session 4 : High-pressure experiments : Rheology

chair : Julien GASC, *ENS, Paris*

15h40 Experimental investigation of dehydration weakening and embrittlement of hydrous minerals

Keishi OKAZAKI, *JAMSTEC, Japan*

16h15 Intermediate depth earthquakes in subduction zones: insights from high pressure experiments

Nadège HILAIRET, *Univ. of Lille*

17h00 Poster Session

## Tuesday, November 20<sup>th</sup>, 2018

### Session 5 : Deformation and anisotropy in and around slabs

Chair : Ana FERREIRA, *Univ. College, London*

09h00 Slab dragging, subduction evolution, and slab deformation

Wim SPAKMAN, *Utrecht Univ., Netherlands*

09h35 Seismic anisotropy in the vicinity of slabs in the transition zone

Andrew NOWACKI, *Univ. of Leeds, UK*

10h10 Deep earthquakes in subducting slabs hosted in highly anisotropic rock fabric

Yingcai ZHENG, *Univ. of Houston, USA*

10h45 Coffee Break

### Session 6 : Shallow structure of slabs and faults

Chair : Hélène CARTON, *IPG Paris*

11h15 How wet are slabs : Studying the link between slab low velocity structures and intermediate depth seismicity

Andreas RIETBROCK, *Karlsruhe Institute of Technology, Germany*

11h50 Hellenic slab faults imaging down to 90 km and associated localizations of intra and supraslab earthquake activity

Maria SACHPAZI, *National Observatory of Athens, Greece*

12h30 Lunch break

### Session 7 : Microstructures and field studies

Chair : Samuel ANGIBOUST, *IPG, Paris*

14h00 Microstructural records of intermediate-depth earthquakes

Kristina G. DUNKEL, *Univ. of Oslo, Norway*

14h35 Mechanically-controlled rock-microstructures: Witnesses of the long-term stress-state in the continental lithosphere

Lucie TAJCMANOVA, *Heidelberg Univ., Germany*

15h10 Fossil intermediate depth (eclogite-facies) earthquake in the Alpine oceanic lithosphere

Marco SCAMBELLURI, *Univ of Genoa, Italy*

15h45 Coffee Break

### Session 8 : High pressure experiments: Hydrated phases

Chair : Anne Line AUZENDE, *ISTerre, Grenoble*

16h15 Seismic signature of volatiles in subduction zones

Carmen SANCHEZ-VALLE, *Univ. of Muenster, Germany*

16h50 Hydrated phases in TZ and top of lower mantle

Eiji OHTANI, *Tohoku University, Japan*

17h30 Panel Discussion  
With : TBD