



CHAIRE DE PHYSIQUE DE L'INTÉRIEUR DE LA TERRE

Année académique 2017-2018

Pr Barbara ROMANOWICZ

Great Earthquakes: Observations and modeling

Colloque en anglais - Workshop in English
organisé avec Yann Klinger, IPG de Paris

Jeudi 30 novembre et vendredi 1^{er} décembre 2017



Thursday, November 30th, 2017

09h00 Introduction Barbara Romanowicz, *Collège de France*

Session 1: Geodetic observation of subduction zone earthquakes

Chair: György Hetényi, *Univ. de Lausanne*

09h05 The calm before the storm: from interseismic coupling to megathrust earthquakes scenarios, case of the Chilean subduction zone.

Marianne Metois, *Univ. de Lyon1*

09h40 Slow slip events, interseismic locking, seismic rupture and afterslip: towards an integrated view of the earthquake cycle after the 2016 Pedernales earthquake, Ecuador

Jean-Mathieu Nocquet, *IRD- Géoazur/ IPG de Paris*

10h15 Documenting the long-term preparation phase of a megathrust earthquake: case of the 2014 North Chile Mw8.1 event

Anne Socquet, *ISTerre, Univ. de Grenoble-Alpes*

10h50 Coffee Break

Session 2: Source processes of great earthquakes

Chair: Martin Vallée, *IPG, Paris*

11h20 Rupture complexity of great earthquakes and its effects on seismic radiation

Claudio Satriano, *IPG, Paris*

11h55 Long and short term nucleation of the 2011 Tohoku-oki earthquake

David Marsan, *Univ. de Savoie Mont Blanc*

12h30 Lunch break

Session 3: Earthquakes in the laboratory

chair: Daniel Faulkner, *Liverpool Univ.*

14h00 The geology, physics and chemistry of earthquakes hosted in carbonate-built rocks

Giulio di Toro, *Univ. of Padua*

14h35 The mechanics of intermediate and deep earthquakes: experimental evidence

Alex Schubnel, *ENS, Paris*

15h10 Coffee Break

Session 4: Rupture dynamics

chair: Luis Rivera, *Univ. de Strasbourg*

15h40 Under the «macroscope»: the dynamics of very large earthquakes

Jean-Paul, (*Pablo*) Ampuero, *IRD/Géoazur, Calif. Inst. of Tech.*

16h15 Dissipation and energy partitioning in the shallow part of earthquake ruptures

Stefan Nielsen, *Durham Univ.*

17h00 Poster Session

Friday Dec 1, 2017

Session 5: Paleoseismology and historical earthquakes

Chair: Eulàlia Massana, *Univ. of Barcelona*

09h00 Repetition of M8 seismic clusters in Mongolia: paleoseismic investigations

Jean-François Ritz, *Géosciences Montpellier*

09h35 Surface rupture of the great Mw 8.6 Assam earthquake in the eastern Himalayas

Jerome Van der Woerd, *Univ. de Strasbourg*

10h10 Historical great earthquake magnitudes: Too high, too low, or just right?

Susan Hough, *US Geological Survey*

10h45 Coffee Break

Session 6: Link between great earthquakes and geodynamics

Chair: Lucilla Benedetti, *CEREGE, OSU Pytheas, Aix en Provence*

11h15 Shattering a plate boundary: the 2016 Mw 7.8 Kaikōura earthquake, New Zealand

Pilar Villamor, *GNS, New Zealand*

11h50 Link between the Great faults of Asia, continental plate tectonics and continental subduction

Anne Replumaz, *Univ. de Grenoble Alpes*

12h30 Lunch break

Session 7: Earthquakes in the context of theoretical modeling

Chair: Marie Pierre Doin, *Univ. de Grenoble Alpes*

14h00 Towards a unified representation of deformation in the lithosphere-asthenosphere system

Sylvain Barbot, *Earthquake Observatory of Singapore*

14h35 Subduction and great earthquakes: insights from natural data and modeling

Francesca Funiciello, *Univ. Roma Tre*

15h10 Why great earthquakes? A modeling approach

Stephan Sobolev, *GFZ, Potsdam*

15h45 Coffee Break

Session 8: Other manifestations of great earthquakes

Chair: Clément Narteau, *IPG, Paris*

16h15 Gravitational signature of giant earthquakes in the GRACE data

Isabelle Panet, *IGN, Paris*

16h50 Tsunami -- when great earthquakes couple eclectic media

Emile Okal, *Northwestern Univ., Evanston, USA*

17h30 Panel Discussion

With : Harsha Bhat, *ENS, Paris*

Yann Klinger, *IPG, Paris*

Jean-Pierre Vilotte, *IPG, Paris*

Tim Wright, *COMET, Univ. of Leeds, TBD*