

Keynotes : 30' talk + 15' discussion
 Intermediate talks : 20' talk + 10' discussion
 Short talks : 10' talk + 5' discussion

School on Subduction Zone Processes -- Scientific Program

7-13 Oct 2023 Cargèse (France)

Typical day	Monday	Tuesday	Wednesday	Thursday	Friday
Session	What's down there ?	Short-term dynamics of the subduction	Slow to fast earthquakes	Slow to fast earthquakes The subduction seismic (super-) cycle	The subduction seismic (super-) cycle
08:30	Keynote 1 Welcome to Cargèse School on subduction processes!	Claudio Faccenna Some Remarks on Subduction dynamics across scale	Satoshi Ide Scaling fast and slow earthquakes	Jean Paul Ampuero The spectrum of rupture speeds of large earthquakes	Belle Philibosian Segmentation and supercycles: A catalog of earthquake rupture patterns from well-studied faults worldwide
09:15	short1 Christie Rowe Controls on strength evolution of subducting oceanic crust	Silvia Brizzi Sediments in Subduction Zones: Investigating their Role on Subduction Dynamics with numerical modeling	Yoshihiro Ito Seismological and geodetic approaches to detect slow earthquakes on the seafloor: From 'Slow' treasure hunting to potential 'Rapid' application to earthquake and tsunami hazard mitigation	Ekaterina Bolotskaya Off-fault inelasticity limits the speed of very large earthquakes	Charlotte Pizer Integrating onshore and offshore paleoseismic records to examine spatiotemporal patterns of past earthquakes at the Hikurangi subduction margin
09:30	short2 Sylvain Barbot Constitutive behavior of rocks during the seismic cycle	Graciela Lopez Campos Influence of Upper-Plate Slab Faults on the Stress Distribution in Accreting Sediments: Insights from Geomechanical Models	Diane Rivet Improving active faults monitoring leveraging submarine telecom fiber optic cables: first results from central Chile	Massoumi Sina Studying the along fault variability of slow slip events through a viscoelastic damage model with healing effects	Louise Maubant The time dependence of plate coupling: an example from the Hikurangi margin
09:45	short3	Yusuke Shimura Evolution in response to progressive ridge approach and subsequent subduction: Insights from conglomerates in the Shimanto accretionary complex, SW Japan	Caroline Chalumeau High-resolution structures of the megathrust at seismogenic depths: insights from seismology	Caroline Mouchon Subdaily slow fault slip dynamics captured by low frequency earthquakes	Anne Socquet Some examples of coupling change and potential link with earthquakes
10:00	Poster + Coffee Break	Poster + Coffee Break			
10:45	Intern. 1 Samuel Angiboust Metamorphic processes in deep subduction faults	Blandine Gardonio Change of deep subduction seismicity after a large megathrust earthquake	Allan Rubin Toward a physical interpretation of tectonic tremor	Quentin Blettery Geodetic evidence that earthquakes start with precursory slow slip	Ozawa So Earthquake cycle simulations with pore pressure evolution accounting for metamorphic fluid production, creep compaction, and fault valving
11:15	short4 Tatsushiro Kawamoto Hydration and carbonation of the mantle wedge in pressure and temperature conditions of deep tremor in Nankai subduction zones	Virginie Durand Rapid Large-Scale Deformation Following an Intermediate-Depth Earthquake in the Hellenic subduction		Leoncio Cabrera Immediate Fore shock or Seismic Nucleation Phase? The case of the Mw 6.9 Valparaiso (Chile) Earthquake	Nathalie Casas Influence of quartz grains size and distribution on fault friction, rheology & Acoustic Emissions
11:30	Intern. 2 Kohtaro Ujie Exploring the geologic fingerprints of deep slow earthquakes in subduction zones	David Marsan Observation of dense clusters of slip-interface, post-Tohoku earthquakes in northern Japan: possible relationship with fluid migration?	Dmitry Garagash Tremors as a driving mechanism of slow slip?	Matt Wei Two way interaction between large earthquakes and slow slip events in subduction zones	Giacomo Mastella Gaining insight into the Megathrust Seismic Cycle Through Machine Learning: from Laboratory Analog Models to the Natural Prototype
12:00	short5 Ioanndi Paraskevi Garnet fracturing reveals ancient unstable slip events hosted in plate interface metasediments	Audrey Chouli Interactions between intraslab intermediate-depth and shallow earthquakes in the Japan trench and the northern Chile subduction zone	Ruyu Yan Tidal sensitivity of tectonic tremors in Hikurangi subduction zones	Kelian Dascher-Cousineau A global survey of short-term slow slip events and its influence on crustal earthquakes	Hegy Betti Modelling fluid-driven seismic cycles in subduction zones
12:15	Lunch Break	Lunch Break			
14:00	SIG or Tuto Seaside Special Interest Group (SIG) Discussions International initiatives around subduction zones Frank - Tassara - Ide - Ampuero	Open science and publishing Rowe - van den Ende - Radiguet	Hands-on Tutorials	Seaside Special Interest Group (SIG) Discussions Directions to take to monitor subduction margins Bodin - Rivet	How can we reconcile geologic and geophysical observations ? Faccenna - Heniquet - Melnick
15:00	Poster + Coffee Break	Poster + Coffee Break			
15:30	Keynote 2 Andres Tassara Frictional structure, seismic segmentation and temperature of the Chilean megathrust: an overview	Agnes Kyraly Subduction induced mantle flow		Laura Wallace Insights into the occurrence and characteristics of near-trench megathrust slip behavior at the Hikurangi subduction zone from almost a decade of seafloor geodetic experiments	Daniel Melnick Geologic and geomorphic records of megathrust earthquake cycles and supercycles
16:15	short6 Jesus Muñoz Transient permeability of a deep-seated subduction interface shear zone	Luca Crisosto Relationship between Megathrust Seismogenic Behavior and Subduction Parameters: Global	Hands-on Tutorials (continued):	William Frank Plate coupling and the intermittence of fault slip	Marcos Moreno Locking distribution in the 1730 Central Chile seismic gap from GNSS and Sentinel-1 InSAR data: Evolution of asperities between the 2010 and 2015 earthquakes.
16:30	Intern. 3 Liam Moser Slab dehydration linked to great earthquake rupture barriers along the Alaska Peninsula subduction zone	Nishizawa Takashi Diversity of gravity anomalies in island arcs and their relationship with various parameters of subduction zones			
16:45	short7 Alexis Gautier Hydrogen formation in subduction zone	Gian Maria Bocchini Placing constraints on ambient stress conditions in subduction forearcs by combining observational and numerical approaches	-A- Deep learning for earthquake detection and phase picking with SeisBench (J. Münchmeyer)	Jannes Münchmeyer Detecting low-frequency earthquakes with deep learning	Elizabeth Sherrill Probabilistic inversion for the boundaries of the locked and transitional creep zones at Nankai and Cascadia subduction zones
17:00	short8 Kristijan Rajic Local vs. long-distance transport in subducted sediments: A story by fluid-mobile elements	Marco Herrera State of stress on faults with enhanced weakening due to thermal pressurization	-B- Analysis of GNSS time series through trajectory model with ITSA (B. Lovery / Z. El Youssif / M. Radiguet)	Giuseppe Costantino Detection and characterization of slow slip events in GNSS data with deep learning	Yuji Itoh Interplate Slip Following the 2003 Tokachi-oki Earthquake From Ocean Bottom Pressure Gauge and Land GNSS Data
17:15	poster presentation or talk	Lightning presentations (1)	-C- DAS data analysis (M. van den Ende)	Joan Comberg Slow slip intermittency inferred from Cascadia tremor locations and energies	Carlos Peña Hunting for the cause of upper-plate aftershocks following the 2014 Iquique (Chile) earthquake
17:30		Lightning presentations (2)		Mathilde Radiguet Investigating the short-term dynamics of slow slip along the Mexican subduction zone	Ending discussion
17:45	Poster session	Poster session with drinks			

List of POSTERS

WHAT'S DOWN THERE

Fintel Alysa	Group 1 for lightning presentations
Montalvo-Lara Carlos Emilio	Deformation Structures of an Active On-Land Exposure of a Tsunamiogenic Splay Fault on Montague Island, Alaska
Tsuchiyama Ayako	Study of the Cocos-North American subduction zone beneath Oaxaca through a Bayesian joint inversion of dispersion curves and receiver functions
Blackwell Alice	A systematic detection of intermediate-depth earthquakes within the Bucaramanga earthquake nest, Colombia
Chang Chengrui	Earthquake relocation at intermediate depths using automatically detected teleseismic depth phases
Heniquet Maxime	Comminution-induced Transient Frictional Behavior in Sheared Granular Halite
Ioanndi Paraskevi Io	Deformation partitioning along the Sicilian-Calabrian Transition Zone (Italy) from seismic, topo-bathymetric and PS-InSAR data.
Maitre Antoine	Multi-scale modelling of subduction interface
Parraguez Landaeta Begoña	Brittle-ductile mixed rheological behavior in subduction zones controlled by the strength contrast in heterogeneous materials.
Strobl Leonie	Underplating evidence on Mejillones Peninsula zone, Chile.
Wang Heming	Dehydration systematics of subducted oceanic crust: constraints from the Eclogite Zone, Tauern Window (Eastern Alps)
Xie Yuying	The seismic properties of serpentinites
Costes Lucile	An automated Kinematic Analysis of Large Earthquakes: A Platform for Back-Projection and Finite Fault Source Inversion
Fresonck Madeline	Evolution of intraslab seismic activity during intense aftershock sequences
Minnaert Clothilde	Steady State Heat Flux from Deep Borehole Thermal Data at the Hikurangi Subduction Zone
Bodin Paul	Tracking feedbacks between fluid-rock interactions and brittle-ductile deformation processes in mantle wedge jadeitites
	What's Next In Monitoring Active Subduction Margins?

SHORT TERM DYNAMICS

Lohani Mohit	Group 1
Mouchon Caroline	Geodynamic models of Hellenic subduction
Wang Binhao	Capturing the subdaily response of the crust to slow slip with ambient seismic noise
Moser Liam	The Growth Characteristics of Large and Small Earthquakes: Insights from Moment Rate Functions
	The down-dip limit of the megathrust seismogenic zone: comparing thermal and lithological controls on frictional and viscous deformation

SLOW TO FAST

Yuji Itoh	Group 1
Nijholt Nicolai	Exponential moment release at the initiation of short-term slow slip events
Affinito Raphael	Triggered and recurrent slow slip in North Sulawesi, Indonesia
Bailliet Marie	The role of pore fluid pressure on laboratory fault stability under undrained fluid conditions
El Youssif Zaccaria	A workflow to generate a DAS-based earthquake catalog, applied to an offshore telecommunication cable in central Chile
Islam Apu Saiful	Insights on along-dip fault transition zone rheology through LFE clustering
Kelian Dascher-Cousineau	Slow Earthquake: Detecting SSE Signals from the Offshore Strainmeter in Cascadia Subduction Zone
Molina Diego	A global survey of short-term slow slip events and its influence on crustal earthquakes
Okuda Hanaya	Characterizing the aseismic and seismic slip during the 2020 SSE in the Tal-Tal area, Chile.
Perry Mason	Influence of sediment diagenesis on frictional behavior of sediments and earthquakes in shallow subduction zones
Trabattoni Alistar	Slow Slip Events and Locking on the Middle American Trench in southern Costa Rica
Van Den Ende Martijn	Improving earthquake localization using a near fault submarine DAS deployment in the Chilean margin
Wu Baoqing	Searching for Tectonic Tremor with Distributed Acoustic Sensing and Lower Energy Envelopes
Miyakawa Ayumu	Structural heterogeneities in fault zone may cause slow earthquakes instead of fast earthquakes, how?
Philippe Darné	Formation of brittle-ductile block-in-matrix structures along plate boundary in subduction zone
Xu Liwei	Dual, but similar, migration regimes observed in slip transient propagation.
	Imaging Southern Hemisphere Subduction Zone Earthquakes With Core Phase Back-Projection

THE SUBDUCTION SUPER-CYCLE

Cresseaux Juliette	Group 2 for lightning presentations
Fofjinj Maaike	Role of the Andean structure in the Post-Seismic Deformation Following the 2014 Mw 8.1 Iquique Earthquake in Chile: New insights from a Finite Element Model Constrained by GNSS and
Kosari Ehsan	How seamounts subduct and affect seismicity: Insights from numerical modelling
Liu Mingqi	Short- and Long-Term Surface Signals of Megathrust Seismic Cycles: Laboratory Seismotectonic Experiments
Lovely Bertrand	Seismic segmentation of subduction zone: effects of the slab thermal configuration
Sarkawi Gina M.	Crustal Deformation Associated with the Seismic Cycle in the Central Andes from InSAR and GNSS Geodetic Time Series
Verwijs Roos	Tectonic uplift and subsidence inferred from coral archives of relative sea level in Balaosan, La Union, Philippines
Villegas Juan-Carlos	The effect of a subducting seamount on the earthquake cycle
Momoh Ekeabino	Earthquake potential in the central Peru subduction zone based on mechanical coupling
	Potential contributions of volumetric deformations to dissipative heating in compressional settings

Barbecue