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Advanced Workshop on Earthquake Fault Mechanics: Theory, Simulation and Observations | (smr 3319)

Monday 02 September 2019

**Free time to collect living allowance and travel reimbursement at Enrico Fermi Building,
Travel unit (Open Mon. and Fri. only) - Kastler Lecture Hall (AGH) (08:30-10:00)**

time	title	presenter
09:30	Coffee break	

Introduction - Kastler Lecture Hall (AGH) (10:00-18:00)

time	title	presenter
10:00	Overview, motivations, observations, open questions	JEAN PAUL AMPUERO
11:30	Fracture Mechanics	JEAN PAUL AMPUERO
13:00	Lunch	
14:30	Fracture mechanics (continued)	JEAN PAUL AMPUERO
16:00	Coffee break	
16:30	Fault friction for dynamic rupture modeling	JEAN PAUL AMPUERO

Tuesday 03 September 2019

Theoretical and computational earthquake dynamics - Kastler Lecture Hall (AGH) **(09:00-19:30)**

time	title	presenter
09:00	Fault friction for dynamic rupture modeling (continued)	JEAN PAUL AMPUERO
10:30	Coffee break	
11:00	Beyond friction: off-fault dissipation	JEAN PAUL AMPUERO
12:30	Lunch	
14:00	Dynamic rupture simulation methods	LUIS DALGUER
15:30	Coffee break	
16:00	Practice: Dynamic rupture in 2D and 2.5D	HUIHUI WENG

Wednesday 04 September 2019

Computational earthquake dynamics - Kastler Lecture Hall (AGH) (09:00-17:30)

time	title	presenter
09:00	3D rupture effects: seismogenic width and rake	HUIHUI WENG
10:30	Coffee break	
11:00	3D dynamic rupture modeling	ALICE GABRIEL
12:30	Lunch	
14:00	Practice: dynamic rupture in 3D	ALICE GABRIEL, DUO LI
15:30	Coffee break	
16:00	Practice (cont'd): dynamic rupture in 3D	ALICE GABRIEL, DUO LI

Thursday 05 September 2019

Connecting earthquake models to observations - Kastler Lecture Hall (AGH) (09:00-18:30)

time	title	presenter
09:00	Ground motions from dynamic models, contribution of earthquake dynamics to strong ground motion prediction	LUIS DALGUER
10:30	Coffee break	
11:00	Ground motions from dynamic models, contribution of earthquake dynamics to strong ground motion prediction (continued)	
12:30	Lunch	
14:00	IUGG, natural hazards and society	A. ISMAIL-ZADEH, IUGG
15:00	Effect of seismogenic width on stepover rupture jumps	JEAN-PAUL AMPUERO
16:30	Coffee break	
17:00	Practice: dynamic rupture (continued)	HUIHUI WENG, DUO LI

Friday 06 September 2019

Kinematic earthquake source inversion - Adriatico Guest House - Kastler Lecture Hall **(09:00-17:30)**

time	title	presenter
09:00	Macroscopic source properties: source time functions, corner frequency, radiated energy, scaling laws	JEAN-PAUL AMPUERO
10:30	Coffee break	
11:00	Finite source inversion	JEAN-PAUL AMPUERO
12:30	Lunch	
14:00	Finite source inversion (continued)	JEAN-PAUL AMPUERO
15:30	Coffee break	
16:00	Practice: finite source inversion	

Saturday 07 September 2019

- Adriatico Guest House - Kastler Lecture Hall (08:30-13:00)

time	title	presenter
08:30	Active deformation and Earthquakes in Italy and surroundings	KARIM AOUDIA
10:00	Coffee break	
10:30	Bridging the gap between seismology and engineering	STEFANO PAROLAI
12:00	Lunch	

Field trip to Civil Protection headquarters in Palmanova, followed by visit to Venzone, near the epicenter of the 1976 Friuli earthquake, dinner, return by 22:00 - (13:00-22:00)

Monday 09 September 2019

Dynamic source inversion and strong motion - Adriatico Guest House - Kastler Lecture Hall (09:00-17:30)

time	title	presenter
09:00	How to use seismological data to infer fault friction properties and stress	ELISA TINTI
10:30	Coffee break	
11:00	How to use seismological data to infer fault friction properties and stress (continued)	ELISA TINTI
12:30	Lunch	
14:00	Impact of uncertainties of crustal model and source variability on ground motions	ELISA TINTI
15:30	Coffee break	
16:00	Dynamic source inversion	JEAN PAUL AMPUERO

Tuesday 10 September 2019

Earthquake cycle modeling - Kastler Lecture Hall (AGH) (09:00-17:30)

time	title	presenter
09:00	Friction laws for seismic and aseismic faulting	MARCO SCUDERI
10:30	Coffee break	
11:00	Friction laws for seismic and aseismic faulting (continued)	MARCO SCUDERI
12:30	Lunch	
14:00	The stability of frictional sliding and the spectrum of fault slip behavior from slow to fast stick-slip	MARCO SCUDERI
15:30	Coffee break	
16:00	Practice: Earthquake cycle modeling	JEAN-PAUL AMPUERO

Wednesday 11 September 2019

Rupture imaging by back-projection - Adriatico Guest House - Kastler Lecture Hall (09:00-17:30)

time	title	presenter
09:00	Array seismology and rupture imaging	LINGSEN MENG
10:30	Coffee break	
11:00	Array seismology and rupture imaging II	LINGSEN MENG
12:30	Lunch	
14:00	Practice: MUSIC teleseismic back-projection	LINGSEN MENG
15:30	Coffee break	
16:00	Applications to earthquake early warning, tsunami warning, rapid hazard assessment	LINGSEN MENG

Dinner at Leonardo Building - (19:30-21:00)

Adriatico Guesthouse Cafeteria will be reserved for a reception. Dinner will be served exceptionally at the Leonardo Building cafeteria.

Thursday 12 September 2019

Earthquake cycle modeling - Kastler Lecture Hall (AGH) (09:00-17:30)

time	title	presenter
09:00	Discussion of questions by participants	
10:30	Coffee break	
11:00	Micro-mechanical friction models	MARTIJN VAN DEN ENDE
12:30	Lunch	
14:00	Practice: Earthquake cycle modeling with QDYN	MARTIJN VAN DEN ENDE (GEOAZUR, NICE, FRANCE)
15:30	Coffee break	
16:00	Induced Seismicity	YIHE HUANG (UNIVERSITY OF MICHIGAN, USA)

Friday 13 September 2019

Machine learning in seismology - Kastler Lecture Hall (AGH) (09:00-17:30)

time	title	presenter
09:00	General overview of machine learning	MARTIJN VAN DEN ENDE
10:30	Coffee break	
11:00	Machine learning in geosciences	MARTIJN VAN DEN ENDE
12:30	Lunch	
14:00	Best practices and pitfalls	MARTIJN VAN DEN ENDE
15:30	Coffee break	
16:00	Random forest method	MARTIJN VAN DEN ENDE

Saturday 14 September 2019

Workshop recap and closing - Adriatico Guest House - Kastler Lecture Hall (09:00-12:30)

time	title	presenter
09:00	Earthquake nucleation	JEAN-PAUL AMPUERO
10:30	Coffee break	
11:00	Closing remarks	