



STATE KEY LABORATORY OF EARTHQUAKE DYNAMICS

Workshop on Tectonic Deformation and Earthquake Mechanism
May 9-10, 2018, Meeting Hall (3rd floor) at Institute of Geology, CEA

Wednesday May 9

Morning Chair: Jing Liu

9:25—9:30

- **Welcome remarks**

Shengli Ma (Institute of Geology, China Earthquake Administration)

9:30—10:30

- **Resolving megathrust slip to the trench and its implications**

Thorne Lay (University of California, Santa Cruz)

- **Discovery of the impact site of the Australasian strewnfield beneath a volcanic field in southern Laos**

Kerry Sieh (Nanyang Technological University)

10:30—10:45 Tea Break

10:45—11:45

- **Fault slip and GPS velocities across the Shan Plateau define a curved southwestward crustal motion around the eastern Himalayan syntaxis**

Xuhua Shi (Nanyang Technological University)

- **Glacially driven formation of high-elevation, low-relief landscapes in eastern Tibet**

Huiping Zhang (Institute of Geology, China Earthquake Administration)

Wednesday May 9

Afternoon Chair: Changrong He, Toshihiko Shimamoto

13:30—15:30

- **Low to high-velocity friction apparatuses: from Beijing to Chengdu machines, and beyond**
Toshihiko Shimamoto (Institute of Geology, China Earthquake Administration)
- **Laboratory acoustic emission, stick-slip nucleation and cascading rupture**
David Lockner (US Geological Survey)
- **Laboratory observation of meta-unstable stage and preslip of fault before earthquake** *Yanqun Zhuo (Institute of Geology, China Earthquake Administration)*
- **Unstable slip events on large-scale experimental fault zones with spatially varying fault gouge lithologies**
Arendje Jozina Louise (Utrecht University)

15:30—16:00 Tea break

16:00—17:30

- **Microphysical model predictions of the limit to fault restrengthening: logarithmic vs. power law healing**
Jianye Chen (Utrecht University/ Institute of Geology, CEA)
- **Weak velocity weakening when controlled by pressure solution**
Changrong He (Institute of Geology, China Earthquake Administration)
- **Importance of flash heating in dynamic weakening of dry and wet fault gouges**
Lu Yao (Institute of Geology, China Earthquake Administration)

Thursday May 10

Morning Chair: Hongfeng Yang, Jianye Chen

9:00—10:30

- **Why do catastrophic earthquakes occur not everywhere?—the characteristics of crustal metastability in the tectonic stress field**
Yuri Rebetsky (Institute of Physics of Earth, Russian Academy of Sciences)
- **Significance of a ductile shear zone below a seismogenic fault: Overall stress vs. slip rate relation and response to stress perturbation**
Hiroyuki Noda (Kyoto University)
- **Deriving frictional properties on seismogenic fault from spontaneous rupture simulations and seismic/geodetic observations**
Hongfeng Yang (Chinese University of Hong Kong)

10:30—10:45 Tea Break

10:45—11:45

- **A review of magnetotelluric studies of the Tibetan Plateau: New insights into crustal deformation and earthquake hazards**
Martyn Unsworth (University of Alberta)
- **Seismogenic context of the 2017 Jiuzhaigou Ms7.0 earthquake in the Songpan-Ganzi block inferred from 3-D magnetotelluric imaging**
Yan Zhan (Institute of Geology, China Earthquake Administration)

Thursday May 10

Afternoon Chair: Huiping Zhang

13:30—16:00

- **Tectonics and earthquakes of the North Anatolian fault and surrounding area**
Koji Okumura (Hiroshima University)
- **Quaternary activity of normal faults in southern Tibet**
Jerome van der Woerd (University of Strasbourg)
- **Hunting for high-resolution paleoseismic records on the Haiyuan and Altyn Tagh faults**
Jing Liu, (Institute of Geology, China Earthquake Administration)
- **Characterizing rupture propagation from slip-rate gradients through the Pingding Shan restraining bend of the Altyn Tagh fault, northwest China**
Veronica Prush (University of California, Davis)
- **Hidden earthquake potential in plate boundary transition zones**
Kevin Furlong (Penn State University)

16:00—17:30 Laboratory tour