LGLTPE SEMINARS

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'Interdisciplinary connections between mineral physics, source seismology, physics of the seismic rupture and comparative planetology'

Monday, 14th March 2022 @ 14h

online: https://ent-services.ens-lyon.fr/entVisio/quickjoin.php?hash=e77e029dfb2d19e4382a8765a26c4c5f4888f7b37005616ae290b561053d537b&meetingID=8661

on site: Amphi L, ENS-lyon

Most earthquakes correspond to dynamic ruptures in peridotites. Interdisciplinarity helps unravel their triggering, nucleation and propagation mechanisms. I will show that most triggering conditions correlate with the destabilization of mantle minerals and that the lower-plane seismicity in subducting slabs delimitates oceanic plate hydration. Comparing earthquakes and labquakes helps to understand the seismic process. In any case, a local transformation generates a stress distortion, rocks tear apart and transient lubrication occurs that is controlled by melt viscosity. Deep-focus ruptures (300-700 km) are no exception. The same should apply for deep moonquakes at 1000 km and deep marsquakes if any.

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