UNIVERSITA' DEGLI STUDI DI PADOVA
DIPARTIMENTO DI GEOSCIENZE
Via Gradenigo 6
35131 Padova
www.geoscienze.unipd.it

DIPARTIMENTO DI GEOSCIENZE

Supercomputing of earthquakes: Unraveling the dynamics of multi-fault rupture cascades, tsunami earthquakes and induced seismicity

Tuesday, 25 May 2021 – 16:30

Webinar "Live" on-line at Zoom link:
https://unipd.zoom.us/j/82978693795?pwd=TmlBSDBVRFVNL3NwTUpGSW8rWFdpQT09

Speaker: **Dr. Alice Gabriel**
Department of Earth and Environmental Sciences - Munich University (Germany)


Supercomputer at the Leibniz Supercomputing Centre, Munich, Germany

Earthquakes are highly non-linear and multiscale processes fracturing the Earth's crust, while large and small events can have socio-economically destructive consequences. Using a physics-based description of earthquakes, high-performance computing and modern numerical methods sheds light on the dynamics, and severity of earthquake behaviour and enables an unparalleled degree of realism in forward modeling.

The seminar will demonstrate the potential of Solid Earth community software for: (i) performing data-integrated large-scale scenarios of recent powerful multi-fault earthquake cascades; (ii) simulating 3D fully-coupled Earth and ocean models of tsunami generated during earthquakes; and (iii) understanding small earthquakes linked to geothermal exploration; using petascale supercomputers.

Proposer: **Prof. Giulio Di Toro**