



Structural Technical Division

Geological Expeditions to the Southern Continent: unraveling the polyphase tectonic history of the Transantarctic Mountains (northern Victoria Land, Antarctica).

Speaker: Laura Crispini

Location: Virtual

Thursday, June 2, 2022 | 12:00pm – 1:00pm

ABSTRACT

Northern Victoria Land (NVL) is located at the Pacific end of the Transantarctic Mountains (TAM), a high-elevation mountain chain that stretches for >3500 km from the Atlantic to the Pacific oceans across the entire Antarctic continent. The modern TAM represent the uplifted western shoulder of the Cenozoic West Antarctic Rift System and their uplift commenced around the Eocene-Oligocene boundary due to inversion of a wide mid-Jurassic to early Paleogene sedimentary basin. The basement rocks of the TAM formed by orogenic processes due to subduction of the Palaeopacific Ocean beneath East Gondwana during the latest Ediacaran to early Palaeozoic Ross Orogeny. This long-lasting geological history of NVL produced a highly anisotropic crust, which is very much susceptible to repeated reactivation.

This seminar will introduce to Italian and joint Italian-German geological expeditions in Antarctica of last 20 years. It will then show the multi-methodological approach used to investigate the geology of remote areas as in NVL and will provide applications to different case studies from the macro- to the microscale and future projects.

BIOGRAPHY



Laura is Full Professor - PhD in Structural Geology at DISTAV-Department of Earth, Environment and Life Sciences, University of Genova (Italy). She took part (as researcher, team leader and project leader) in various geoscientific expeditions to northern Victoria Land in Antarctica and in the IODP Superfast Campaigns to drill a complete section of the upper oceanic crust (ODP Hole 1256D, Leg 206 and Exp 309, Pacific Ocean) and the ICDP Oman Drilling Project (2018-2020); she's involved in the IODP Hawaiian North Arch Crust proposal and the ICDP SWAIS 2C (Sensitivity of the West Antarctic Ice Sheet to +2°C). She started her career as a field oriented geologist with an ongoing experience in field mapping, structural geology, core logging, fabric analysis and petrology

with various multidisciplinary applications, tectonics and geodynamics.