



UNIVERSITÀ
DI TRENTO

Dipartimento di
Fisica

PhD Program in Space Science and Technology - SST

Shock metamorphism in rock-forming minerals

Specific Seminar – Curriculum 3

2026, November 5, 10 a.m.

Speaker:

Dr. Lidia Pittarello - Naturhistorische Museum Wien

Abstract:

Shock metamorphism is a natural process induced by planetary collisions and hypervelocity impacts on Earth. Due to the high strain rate achieved during shock metamorphism, permanent modifications in natural materials are induced, allowing the reconstruction of the peak temperature and pressure to which the target rock was exposed, and thus contributing to our understanding of the impact process. Minerals react to shock metamorphism according to their shock impedance. Here, the most important shock effects known for various rock-forming minerals—as observed in terrestrial impact craters, shocked meteorites, and shock experiments—along with the most suitable analytical methods for studies on shock metamorphism will be briefly illustrated.

Short Bio:

After completing my Ph.D. at the University of Padua (Italy) on deep-seated fossil earthquakes recorded in crystalline rocks, I moved to the University of Vienna (Austria) to study shock metamorphism in volcanic target rocks from selected impact craters on Earth. Between 2013 and 2016, I was responsible for the Antarctic meteorite collection at the Royal Belgian Institute of Natural Sciences in Brussels (Belgium). In 2016, I received an FWF Elise Richter Fellowship to study shock metamorphism in plagioclase and returned to the University of Vienna. Since 2019, I'm senior scientist and curator of petrographic collection at the Natural History Museum of Vienna and since 2023 "Privatdozentin" (lecturer recipient of the academic habilitation) at the University of Vienna.

Online attendance:

Information on remote participation can be requested by sending an e-mail to dn_sst@unitn.it

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