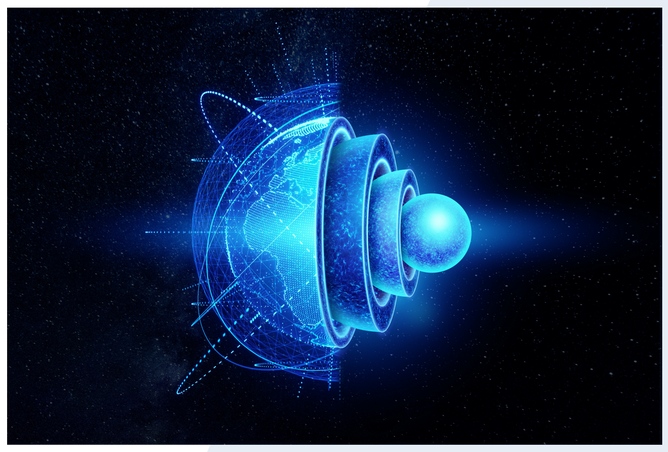
Topics in Planetary Interiors

Geo.X

Upcoming Seminar (Fall 2022)

Geological processes deep underneath our feet and on remote planetary objects are inaccessible for our direct observation. Yet, they are tremendously important for our understanding of how planets form and evolve. In the Geo.X series *Topics in Planetary Interiors* we invite diverse experts to highlight forefront research on the properties and processes inside Moons and Planets that provide key insights into planetary evolution.



The presentations will be held via Zoom:
If you are interested in attending the seminar series, please contact Dr. Sergey S. Lobanov (lobanov1@uni-potsdam.de) for the Zoom details.

21st November, 2022 at 16:15 (CET)

Prof. Dr. Marc Hirschmann

Chemical habitability and planetary volatiles - a story of loss

University of Minnesota

Earth's supply of life-essential volatile elements (including hydrogen, carbon, nitrogen, and sulfur) is obviously appropriate for the long-term maintenance of a habitable planet and for the persistence of moderate climates and for life. It is also well-understood that both an excess or a deficiency of these ingredients could yield an uninhabitable planet. All of these life-essential elements are intrinsically abundant in the primordial materials from which our solar system was born, but multiple processes of loss limited their supply to the terrestrial (rocky, Earth-like) planets. In this lecture, I will address two broad associated topics. First, how do we characterize the volatile inventory of our accessible planet, including both near-surface reservoirs and those stored in the interior? Second, what were the loss processes that limited the volatile supply to the terrestrial planets, and specifically, to what extent did processes on planetesimals - the small early precursors of the planets - promote volatile loss?

The TiPI seminar series is organized by Sergey S. Lobanov (Uni Potsdam), Ana Plesa (DLR), Ingrid Blanchard (Uni Potsdam) and Christoph Sens-Schönfelder (GFZ). Contact: lobanov1@uni-potsdam.de