



PhD position in Planetary Atmospheres at ETH Zürich

The Experimental Planetology Group invites applications to undertake a PhD on the hydrodynamics of loss of atmospheres from planetary bodies and how it affects their composition.

Project Background

The escape of atmospheres from planets and their precursors is a key process in determining their composition and structure. However, descriptions of how atmospheres evolve, particularly with regards to their physical state and composition, remain uncertain.

Job Description

The successful candidate will develop numerical models based on experiments using an aerodynamic laser-heated levitation furnace to simulate atmospheric escape in the laboratory. Velocimetry measurements will be performed in order to describe the flow of gases around a molten bead in a fluid dynamical framework. Isotopic analyses of the residues of atmospheric loss are to be undertaken to establish the pressures at the surface of the bead. These constraints will be used to develop a 3D model of atmospheric loss from planetary bodies.

Profile

- Prospective applicants should hold an MSc in physics, with a specialisation in fluid dynamics, atmospheres, physical chemistry or related disciplines.
- The successful candidate is expected to fulfil some laboratory and/or teaching duties.
- Remuneration will conform to the internal rate set by ETH Zürich for doctoral students, [here](#).

We offer

- A friendly, dynamic and interdisciplinary environment at ETH (Prof. Paolo Sossi and Dr. Jérôme Noir) and the University of Duisburg (Prof. Rolf Kuiper) at the forefront of experimental, numerical and isotopic work.
- Wide perspectives in the planetary sciences across the Department of Physics and the Center for the Origin and Prevalence of Life.
- ETH Zurich is ranked first in the world for Earth Sciences, a product of the cutting-edge research performed within the Department of Earth and Planetary Sciences (D-EAPS).
- At ETH, PhD completion is expected within 4 years.

Application

We look forward to receiving your application in the form of a

- CV
- 1-page statement of motivation

All applications must be submitted via the online portal, [here](#). The deadline for applications is the **23rd of September 2024**, ideally with a start date of **1st of January, 2025**. Further information about our group can be found on our website www.planetology.ethz.ch. Any other inquiries should be addressed to Prof. Paolo Sossi, [paolo.sossi \[at\] eps.ethz.ch](mailto:paolo.sossi@eps.ethz.ch).