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## 3 to 3.5 year fully funded PhD at ETH Zurich in field observations of ice nucleation in the North-Western Himalaya Region

The Atmospheric Physics group at ETH Zurich (IAC-ETH) invites applications for a 3 – 3.5-year PhD position integrated into a Binational Indo-Swiss project “ICE nuCleating paRticle and cloUd condensation NuClei properties in the north-western Himalayas (ICE-CRUNCH), funded by the Swiss National Science Foundation (SNSF) and the Ministry of Earth Sciences (MoES) India.

**Project background:** In the troposphere, aerosol act as ice nucleating particles (INPs) and cloud condensation nuclei (CCN) playing an important role in determining cloud formation, precipitation initiation, cloud properties, radiative transfer, tropospheric composition and chemical budgets. The North-Western Himalayas (NWH) has a unique climate and geographical setting with rich biodiversity and other natural resources. Despite its enormous significance, our understanding of key physical and chemical properties of aerosol particles over NWH is largely absent, limiting the accuracy of climate predictions in this region. ICE-CRUNCH will conduct a series of campaigns to measure key aerosol particle properties at Patnitop, a high-altitude location (33°5’N, 75°20’E, 2024 m asl) in the Union Territory of Jammu & Kashmir, NWH, India. The first phase of the project will include laboratory preparation for field measurements in India. The projects objectives are: (i) To quantify the CCN and INP concentrations and physicochemical properties of aerosol particles at Patnitop in the NWH. (ii) To delineate the contributions of natural and anthropogenic aerosols to cloud formation at Patnitop in the NWH.

### **Job description of the field experimental PhD position:**

- Participating in an intensive field campaign over four seasons between Jan - Dec. 2024, targeting the wet (monsoon) and dry seasons. The measurements will include offline and online sample collection where state of the art instruments will be deployed in a container installed at the field site to quantify the concentration of INPs and CCN as well as aerosol size distribution, relevant for warm and cold cloud formation.
- Collecting particulate matter and precipitation sampled to detect micro- and microbial environmental DNA (eDNA) as tracers of natural biogenic particles as well as INP analysis.
- Collaborate with the Indian partners for aerosol and PM chemical composition measurements

**The successful candidate** should hold a MSc (or equivalent) in chemistry, physics, engineering, atmospheric/environmental sciences, or a related field. Knowledge of oral and written English is required. Willingness to travel to and stay in India multiple times during the project is a requirement and the ability to live in remote areas of the Himalayan foothills will be necessary. Knowledge of aerosol measurement techniques and data analysis in Igor, MATLAB, Python or similar software is highly desired, and some knowledge of LabVIEW would be an asset, but not necessary. We are looking for a highly motivated, committed, and creative person.

**We look forward to** receiving your online application that includes a CV, academic transcripts, work certificates (if any) and a 1-page motivation letter stating previous research experience and interests. Please provide the contact information of at least two referees. Note that we exclusively accept applications submitted through our [online application portal](#). Applications via email or postal services will not be considered. We are looking for a candidate to start in June/July 2023. Applications will be considered immediately until the position is filled.

**For more information** on our group, contact [zamin.kanji@env.ethz.ch](mailto:zamin.kanji@env.ethz.ch) and visit our [website](#).