

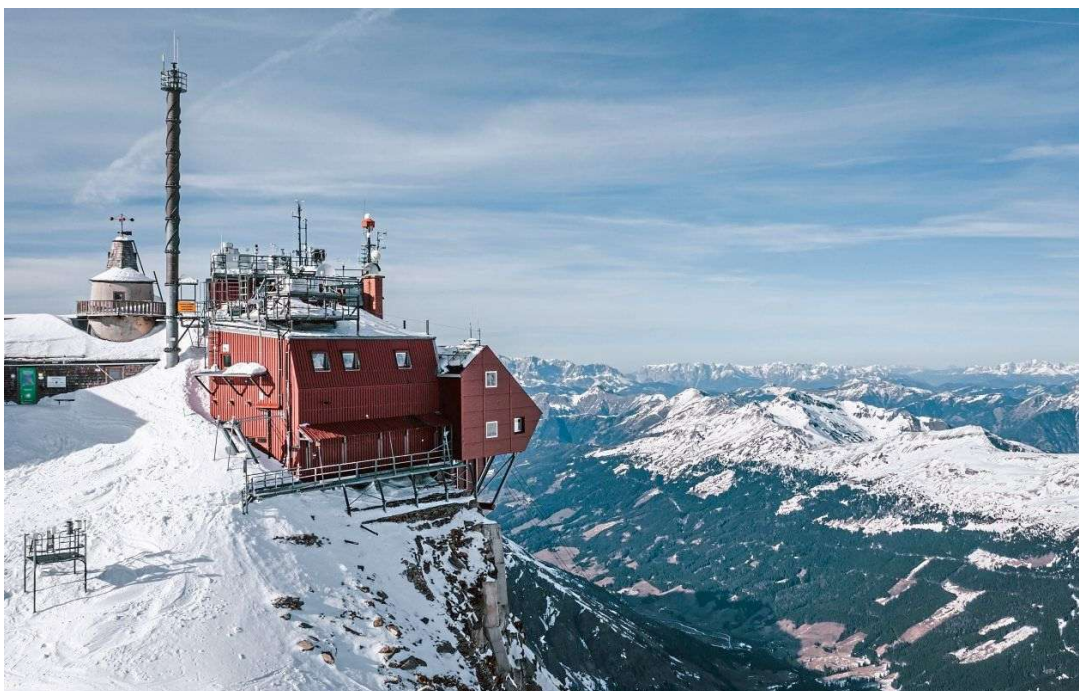
Master thesis project: Angular light scattering and polarization measurements of cloud particle ensembles

At IMKAAF (Campus Nord), we are looking for a motivated master student to characterize and operate a novel cloud laser polarimeter. The instrument consists of a sending unit and a receiving unit. The sending unit emits a laser beam with a defined polarization state. The receiving unit takes images of the laser beam, which contain light that is scattered by cloud particles at a broad angular range with respect to the incident laser beam. Furthermore, the receiving unit can determine the state of polarization of the scattered light.



The one-year project will start with a laboratory characterization of the instrument. A measurement campaign will follow between May 2026 and July 2026 at Sonnblick observatory, Austria, where a research stay of several weeks is planned. The second half of the project is dedicated to developing a python program, which converts the recorded images to light scattering data (e.g. the scattering matrix elements or the linear depolarization ratio). The data can then be compared to Mie theory.

We are looking for a student with a background in physics, environmental physics, meteorology or physical chemistry, interested in laboratory work, field work and data analysis. If the project caught your interest, please contact adrian.hamel@kit.edu for more information about the project.



<https://i.ds.at/DLMCng/rs:fill:1600:0/plain/2022/11/28/Sonnblick2.jpg> (17.02.2026)