

We invite applications for a PhD position under the supervision of Dr. Ulrich Krieger and Prof. Thomas Peter at the **Institute for Atmospheric and Climate Science**, ETH Zurich, Switzerland.

PhD in atmospheric chemistry – Development of a new experimental platform for aerosol research

The research project aims at better understanding the aging processes of atmospheric aerosol particles. Within this work, we will develop a new laboratory setup that couples an existing electrodynamic balance (EDB) to a mass spectrometer (MS). Presently, laboratory experiments mostly rely on setups which compensate the limited exposure time of particles in the laboratory—as compared to the longer lifetime of aerosols in the real atmosphere—by increasing oxidant concentration. Often these concentrations are orders of magnitude higher and exposure times orders of magnitude shorter than those present in the atmosphere, so that the “oxidative lifetime” is the same. However, given nonlinearities in the oxidative chains it remains questionable, whether the same particle composition results after several generations of oxidation. EDB experiments with single, levitated aerosol particles allow exposure over indefinite times; mass spectrometry offers the necessary analytical capabilities.

The main tasks of the PhD student will be to develop, implement, test and apply the new laboratory setup. She/he will perform ozonolysis and photochemistry experiments with the new setup, and compare the results with processed-based aerosol chemistry simulations. The project duration is three years and the position can be taken as soon as possible.

The successful candidate should hold an MSc degree (or equivalent) in atmospheric or environmental sciences, physical chemistry, or experimental physics. The candidate should be curious, creative, collaborative as well as able to think critically about the own measured and modeled data. She/he should be keen on developing new instrumentation as well as applying it to physical and chemical processes in the atmosphere. Prior hands-on laboratory skills are essential. Some experience in mass spectrometry or optical spectroscopy will be a plus. Good written and oral communication skills in English are required.

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 research experiences and interests). Furthermore, please provide the contact information of at least two potential referees. Please note that we exclusively accept applications submitted through our online application portal. Applications via email or postal services will not be considered.

For further information about the project and the working group please contact Dr. Ulrich Krieger (no applications) by email ([ulrich.krieger\[at\]env.ethz.ch](mailto:ulrich.krieger[at]env.ethz.ch)) and visit our [Website](#).



Apply now

