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Materials Science & Technology

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Empa, the Swiss Federal Laboratories for Materials Science and Technology is an interdisciplinary research institute of the ETH Domain. Empa's R&D activities focus on meeting the requirements of industry and the needs of society, and thus link applications-oriented research to the practical implementation of new ideas. The Laboratory for Air Pollution / Environmental Technology has an opening for a

PhD Candidate on Statistical analysis of long-term air quality data in Switzerland

Context

The concentrations of air pollutants are measured at many sites in Europe for several decades. In Switzerland, air pollution monitoring began in the 1970s in the context of international programmes to reduce and prevent long-range transboundary air pollution. Today, it fulfils the requirements of both national legislation and international treaties and provide detailed spatial and temporal information. The currently available time series of air pollutants are a precious archive for assessing the trends and processes relevant for air quality in Switzerland during the past 25 years.

Objectives

The PhD candidate will use state-of-the-art statistical methods, e.g. methods from time series analysis and extreme value statistics for studying temporal trends, changes in the spatial and temporal variation of air pollutants, and for understanding of underlying atmospheric processes including the relationship between air pollutant concentration and meteorology. The project will focus on tropospheric ozone and its precursors (nitrogen oxide, volatile organic carbons), as well as on atmospheric particulate matter. The findings will be linked to the developments of air quality in the whole of Europe. This PhD project will be performed in close cooperation with the Ecole polytechnique fédérale de Lausanne (EPF Lausanne, Prof. Satoshi Takahama).

Qualifications

We are looking for a highly motivated PhD candidate with a Master's degree in environmental sciences, chemistry, physics or a related discipline, and a strong interest in statistical data analysis as well as an affinity for programming. We expect excellent English language skills and an interest in acquiring fluency in German.

For further information contact Dr. Christoph Hueglin, e-mail: christoph.hueglin@empa.ch, phone +41 58 765 4654.

Applications should be accompanied by a CV, a letter of motivation and addresses of two referees.

All applications must be submitted online at www.empa.ch/jobs