Postdoctoral position in Statistical Data Science on Ensemble Postprocessing for High-impact Events

In the framework of a collaboration being currently set up between the University of Bern and the Swiss Federal Office of Meteorology and Climatology (Meteoswiss), we are calling for applications for a 2-year postdoctoral position (80%-100%) to be funded subject to successful completion of the collaboration contract.

The main goal is to investigate and develop statistical postprocessing methods for improving the forecasts of meterological parameters related to severe weather events and corresponding weather warnings (such as precipitation, wind, temperature). These high-impact weather events are not strictly extreme events, but relatively rare and postprocessing methods for general weather may no longer be optimal in this context. The desired focus on rare events will be achieved by suitable adaptations of scoring rules. Besides this, parametric, semi- and non-parametric distributional probabilistic forecasting methods will be compared, possibly including linear and non-linear features within the covariates. When applicable, Machine Learning approaches will be included in benchmarks and also possibly leveraged within statistical postprocessing. Also, since non-parametric approaches may call for more data than available locally, spatial weighting schemes will be considered, with a view towards methods of analogs for designing efficient weighting.

The recruited postdoctoral researcher will be mentored from the academic side by a multidisciplinary team from Statistics (Prof. David Ginsbourger and Prof. Johanna Ziegel) and Geography (Prof. Olivia Romppainen-Martius and Dr. Pascal Horton), all affilliated with the Oeschger Center for Climate Change Research (University of Bern). The recruited Postdoc will also work a substantial part of her/his time at MeteoSwiss (near Zürich) under the guidance of Dr. Jonas Bhend and Dr. Mark Liniger. This will ensure an optimal know-how transfer on the understanding of the movivating problems, meteorological expertise, the exact user needs and practical applicability and the work can build upon prior experience at MeteoSwiss.

The ideal candidate either has a PhD in statistics with a strong taste for applications in areas related to meteorology and climate sciences, or a PhD in climate sciences with a strong background in theoretical and applied statistics. In all cases, the position will require outstanding data analysis and implementation skills, very good communication and team player abilities, and academic writing proficiency. We offer a multi-disciplinary environment with the possibility to have an impact on science and society. The starting date is as soon as possible in 2020. Applications will be reviewed swiftly and selected candidates will be contacted for interviews.

CV, motivation letter and references to be sent jointly to david.ginsbourger@stat.unibe.ch & johanna.ziegel@stat.unibe.ch