

Postdoc position at EPFL Environmental Remote Sensing Laboratory (LTE)

**Project NowPrecip2: Ensemble generation and improvement of the evolution of intense precipitation cells in NowPrecip.**

Reliable forecasting of precipitation is a critical and challenging task of many operational weather services, with key consequences for population and goods protection. NowPrecip is currently the MeteoSwiss method that handles the areal nowcasting of precipitation. NowPrecip is producing outputs for a nowcasting horizon up to six hours and blends seamlessly with the Numerical Weather Prediction output. Until now, it has been running in deterministic mode (single member). Running NowPrecip in ensemble mode (multi-member output) and improving or optimizing its internal components, would be highly beneficial for all the systems that use its output, including the warnings at a national level.

In close collaboration with the Radar, Satellite and Nowcasting division of MeteoSwiss, we are starting a new project building on the large archive of radar and gauge measurements existing at MeteoSwiss, with the following scientific and operational objectives:

1. Investigate the potential for improvement of the nowcasting skill through improvement in the optical flow and the estimation of the growth and decay of precipitating cells.
2. Use the current platform of NowPrecip to produce a multi-member ensemble output.
3. Optimize the sharing of information between NowPrecip and other MeteoSwiss applications related to precipitation, in order to improve the consistency of their warnings.

We are looking for a creative and energetic Postdoc to investigate the above-mentioned scientific questions, starting as soon as possible. Funding is available for up to 3 years through a collaboration between EPFL and MeteoSwiss with a competitive salary (starting at 86 kCHF/year). Review of the applications will continue until the position is filled.

The Postdoc project will be jointly supervised by Prof. Alexis Berne (EPFL) and Dr. Ioannis Sideris (MeteoSwiss, Locarno Monti). The Postdoc will spend time in both Lausanne and Locarno.

Applicants should preferably have a PhD in meteorology, atmospheric physics, radar engineering or hydrology, but applicants with knowledge in related fields, such as geostatistics, data science etc. will also be considered. Strong experience with programming and statistical analysis is required, with first preference in the statistical language R (other languages, such as Python, will be also considered). Any knowledge of nowcasting, forecast verification, and geostatistics will be an advantage. Apart from scientific aspects, the project will involve helping with building the IT infrastructure for producing an ensemble of NowPrecip (e.g. constructing scripts, testing transmission of inputs and outputs, validating the performance and checking the robustness of the operational product, working with containers), therefore ability to perform such operations will be a plus.

Proficiency in spoken/written English is mandatory, knowledge of French, Italian or German would be an advantage. Applications should include a CV, a statement of research interests and qualifications, as well as contact details of three academic referees in electronic form.

## Contact

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