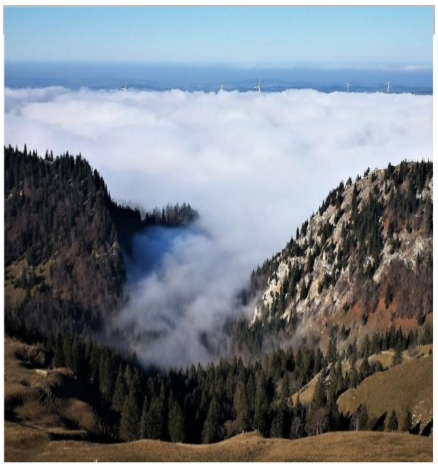
Anmeldung eines Themas für ein/e

Masterarbeit **(x)**
Forschungsseminar **(x)**
Methodenseminar **(x)**

Thema	**Representation of fog and super-cooled low stratus over the Swiss plateau in ICON forecasts**
Erstgutachter	Prof. Dr. Ina Tegen, Leibniz-Institut für Troposphärenforschung (TROPOS) Permoserstraße 15, 04318 Leipzig.
betreuender Wissenschaftler:	Dr. Fabian Senf, TROPOS Tel: 0341-2717-7170 eMail: senf@tropos.de
Zweitgutachter	Prof. Dr. Johannes Quaas, Institut für Meteorologie, Universität Leipzig, Stephanstr. 3
Kurzbeschreibung	 The numerical simulation of fog and low stratus over the Swiss plateau is challenging to due the complex interplay between cloud micro-physics, atmospheric radiation and turbulent mixing in a highly structured terrain. It has been realized that Swiss operational weather forecasts tend to dissipate fog to fast and that this can only be partially corrected by adjusting the vertical resolution and the parameterized mixing in the planetary boundary layer. In the proposed work, ICON simulations of fog and super-cooled low stratus will be analyzed and evaluated against available observations. The work is accommodated in a SPP PROM project and part of a research collaboration between TROPOS and ETH Zürich.
Referenzen:	Scherrer, S. C., & Appenzeller, C. (2014). **Fog and low stratus over the Swiss Plateau− a climatological study**. *International Journal of Climatology*, *34*(3), 678-686. Westerhuis, S., Fuhrer, O., Cermak, J., & Eugster, W. (2020). **Identifying the key challenges for fog and low stratus forecasting in complex terrain.** *Quarterly Journal of the Royal Meteorological Society*, *146*(732), 3347-3367. Westerhuis, S., & Fuhrer, O. (2021). **A Locally Smoothed Terrain-Following Vertical Coordinate to Improve the Simulation of Fog and Low Stratus in Numerical Weather Prediction Models**. *Journal of Advances in Modeling Earth Systems*, *13*(8), e2020MS002437.