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UNIVERSITÄT BERN

## Seminar über Microwavephysics and Atmospheric Physics

**Referent:** Jonas Hagen, Institute of Applied Physics, University of Bern

**Titel:** Middle atmospheric wind measurements on La Réunion island by the microwave radiometer WIRA-C and comparison with lidar

The passive microwave wind radiometer WIRA-C (Wind Radiometer for Campaigns) has been installed on the Maïdo observatory on the tropical island La Réunion (21° South, France) in August 2016. WIRA-C measures the Doppler shift of the ozone thermal emission line at 142 GHz and exploits the pressure broadening effect to retrieve an altitude resolved wind profile. The retrieval is based on a model of the atmosphere and optimal estimation techniques implemented by ARTS and Atmlab/Qpack. In contrast to previous versions of the retrieval process, the atmospheric model is three-dimensional. Meaningful wind speeds can be retrieved for an altitude range of 30 to 70 km and WIRA-C is able to measure continuously, independent of daylight and clouds. Co-located at the Maïdo observatory is the Rayleigh-Mie Doppler wind lidar of CNRS/INSU (Guyancourt, France) and OSUR (La Réunion, France). It has been operated routinely twice a week since September 2015 and delivers wind profiles up to 50 km altitude.
This talk will give an overview over the WIRA-C instrument and the retrieval process involved and present the measured wind profiles from La Réunion island. The measurements will also be compared to ECMWF model data and coincident measurements from the Rayleigh-Mie Doppler wind lidar.

**Zeit:** Freitag, 24.02.2017, 10:15 Uhr

**Ort:** **Hörsaal A97**, Gebäude exakte Wissenschaften, Sidlerstrasse 5, Bern, Schweiz