ID: Type: **Poster**

middle atmosphere weather models using LiDAR and ambient noise: a case study for IS02

In routine processing of IMS infrasound data at the IDC, microbaroms with dominant frequencies ranging from 0.1 to 0.5 Hz appear in overlapping frequency bands and are considered as noise. In this study, microbarom signals were used as calibration signals, and their amplitudes at the Argentinian infrasound station IS02 were modelled based on operational ocean wave interaction simulations and a semi-empirical attenuation relation. This relation strongly depends on the middle atmosphere (MA) dynamics; however, vertical temperature and wind profiles, provided by numerical weather prediction (NWP) models, have exhibited significant biases when compared with high-resolution LiDAR soundings in altitudes where infrasound signals propagate. Here, the fully autonomous LiDAR for MA temperature measurements was installed in Rio Grande, Argentina, which is around 60 km north of IS02. Temperature measurements have been carried out since November 2017. The poster provides first results of collocated LiDAR and infrasound measurements covering a time period of more than one year. Due to the extended duration of the LiDAR campaign at IS02, compared to the one at IS26 in 2016 (seven months), the results are expected to be more significant and highlight the seasonal differences with enhanced accuracy.

Primary author: HUPE, Patrick (Federal Institute for Geosciences and Natural Resources (BGR))

Presenter: HUPE, Patrick (Federal Institute for Geosciences and Natural Resources (BGR))

Track Classification: Theme 1. The Earth as a Complex System