

**S5P55**

## **Upper atmospheric tides from airglow observations at El Leoncito, Argentina**

Esteban R. Reisin and Jürgen Scheer, IAFE (CONICET/UBA), Buenos Aires, Argentina

We extract information on the upper atmospheric tide from our long dataset of airglow-derived temperatures and band intensities. This is based on spectroscopic observations of the OH(6-2) and O<sub>2</sub>b(0-1) bands corresponding to two different altitudes (87 and 95 km) in the mesopause region. For this study, about 2900 nights of data acquired at El Leoncito (CASLEO; 31.8°S, 69.3°W) between 1998 and 2014 are used. Spectral analysis of the nocturnal time series of temperatures and intensities results in the characterization of the dominant spectral components in the tidal period range. We find strong tides mainly from April to October, but often subject to considerable night-to-night variations. We focus on the 169 cases most clearly identified at similar periods for both airglow emissions, which is more than an order of magnitude above our result from the 1980s/early 1990s. These cases are particularly suitable for determining vertical wavelengths independently, and consistently, for both emissions. The technique uses the phase difference between the intensity and temperature oscillations and Krassovsky's ratio, according to the Hines and Tarasick theory. All these cases correspond to upward energy propagation, as expected for low-altitude tidal excitation. The mean vertical wavelength is 31.1(±1.5) km for OH and 46.5(±2.4) km for O<sub>2</sub>.