Geophysical Research Abstracts,
Vol. 11, EGU2009-13347, 2009
EGU General Assembly 2009

Observations of water vapor variability in the polar mesosphere by high time resolution spectrometry.

K. Hallgren, P. Hartogh, and C. Jarchow

Max Planck Institute for Solar System Research, Planets, Katlenburg-Lindau, Germany (hallgren@mps.mpg.de)

We have, since May 2008, operated a state-of-the-art, high time resolution heterodyne spectrometer at ALOMAR observatory in Northern Norway.
The instrument itself consist of a cooled front-end and observes the water vapour rotational transition at 22.235 GHz. To further increase the sensitivity of the instrument we measure horizontal and vertical polarization simultaneously with 2 identical receiver chains and chirp transform spectrometers. The altitude range measured is between the upper stratosphere to the mesopause.
Waves with different periods and at different altitudes can readily be seen in the data. We here present the initial results and interpret them in terms of atmospheric tides and to the current understanding of the water vapor dynamics in the mesosphere.