



Features in the distribution of middle atmospheric water vapour as observed by groundbased microwave radiometeres in Switzerland and South Korea.

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The University of Bern operates two ground based microwave radiometers to measure the water vapour content in the stratosphere and mesosphere. One instrument is located nearby Bern [47°N, 7°E], Switzerland, and has been providing data since 2002 to the "Network for the Detection of Atmospheric Composition Change", NDACC, as well as to the European project GEOMON. The second radiometer has been operational in Seoul [37°N, 126°E], S-Korea, starting November 2006. Both instruments provide water vapour profiles in the altitude range 25 to 70 km.

Long-term measurements of middle atmospheric water vapour by ground-based microwave instruments are sparse. These instruments provide long-term stability and high time resolution, so are in this sense ideal for short time-scale variability studies, monitoring long-term trends and validation of satellites. An analysis between these 2-year overlapping datasets of the European and Asian continent can provide valuable input on the distribution of wave patterns.

In this study, we present the measurement characteristics of the instruments, and validate our data with water vapour profiles from the Aura/MLS instrument. In addition, we investigate correlations between these two midlatitudinal stations, gathering information on the spatial distribution of water vapour, particularly for pressures from 1 to 0.03 hPa.