



## Recent mesosphere OH results on different time scales

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Mesospheric parameters are derived from OH measurements at 87 km altitude. Their variations are analyzed at very long, intermediate, and very short time scales.

1) A series of OH temperatures at Wuppertal has been re-analyzed recently (Offermann et al., JASTP, 2006). Parameters derived from these data are analyzed for long term trends. An increase in Equivalent Summer Duration (ESD) is found in this extended 19 year data set which is similar to what was obtained earlier in a shorter data series. It finds its counterpart in a decrease of summer duration in the stratosphere. The two results suggest a change in middle atmosphere mean circulation.

The same data set is analyzed for seasonal temperature variations. The largest of these is an annual variation the amplitudes of which showed strong changes recently. Also this is an indication of a circulation change.

2) At intermediate time scales planetary waves have been measured simultaneously at the stations of Wuppertal (51 N, 7 E) and Hohenpeissenberg (48 N, 11 E) by the same type of instrument (GRIPS 1,2). Data comparison suggests that standing planetary waves are seen. They can be used to validate corresponding satellite data (SABER analysis, J. Forbes).

3) Shortest periods (minutes) are seen in OH temperatures and in OH line intensities. Oscillations with periods shorter than the Brunt-Vaissala period are frequently observed. Their nature has to be determined yet (Doppler shifted gravity waves? infrasound?). Twenty years of re-analyzed data are available for this at a time resolution of 2 - 5 min.