



Comparison of the new Skymet Meteor Radar at Collm Observatory (51.3°N, 13°E) with other established Wind measuring Systems for the Middle Atmosphere in Germany

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During winter 2004/2005 measurements of mesospheric/lower thermospheric (80-100 km) winds have been carried above Germany out using 4 different ground-based systems. These are a meteor radar (36.2 MHz) at the Collm Observatory (51.3°N, 13°E), the OSWIN VHF radar (53.5 MHz, operated in all-sky meteor mode) at Kühlungsborn (54.1°N, 11.8°E), the MF radar (3.18 MHz) at Juliusruh (54.6°N, 13.4°E) and the LF D1 total reflection experiment (177 kHz) using receivers at Collm and a transmitter at Zehlendorf near Berlin with the reflection point at 52.1°N, 13.2°E. This provides the possibility to compare the observations of different radar systems in nearly the same measuring volume. Generally, the seasonal and long-period (2-30 days) patterns of wind variability are well reproduced by each of the systems. Differences are found for amplitudes of winds and waves. Meteor radar winds are generally stronger than the winds observed by MF and LF radars, tidal amplitudes of these systems are also influenced. Very good agreement is found among the two meteor radars.