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Total OH reactivity at Hohenpeissenberg during HOPE-2012

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The total OH-reactivity was continuously measured at the GAW station Hohenpeissenberg in rural southern Germany during the Hohenpeissenberg Photochemical Experiment (HOPE-2012) in June-August 2012. These data complement the OH, H2SO4 and ROx measurements routinely run by this CIMS instrument. The Hohenpeissenberg chemical ionisation mass spectrometer (CIMS) was modified by adding a second SO_2 titration zone downstream of the one used in routine OH measurements. The OH decay in the sample flow-tube is determined and the total OH reactivity is calculated from the differences of OH-signals of calibration (UV-photolysis of water vapour in ambient air) and ambient measurements in these two zones. Furthermore, a wall-loss rate is considered which is determined in zero gas measurements. Results of reactivity calibration measurements are presented and the uncertainty is evaluated. The hourly mean reactivity data show a diurnal pattern with a morning minimum at 4:00 of 3/s and a maximum of 5/s at 20:00 CET. The measured reactivities are compared to turnover-rates of reactive trace gases measured at the GAW station Hohenpeissenberg.