



## **RECONCILE Airborne ClO<sub>x</sub> Measurements and the ClO/ClOOCl Equilibrium Constant**

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ClO<sub>x</sub> (denoting mainly ClO and its peroxide dimer ClOOCl) chemistry is driving the ClO dimer and ClO-BrO catalytic ozone destruction cycles leading to the ozone hole phenomena in southern and northern high latitudes.

HALOX is an in-situ instrument to measure ClO and ClO dimer by the technique of thermal dissociation (of the dimer) followed by chemical conversion and resonance fluorescence (CCRF) detection of the halogen atoms. The instrument was installed onboard the high-flying research aircraft M55 Geophysica during the RECONCILE Arctic field campaign in early 2010. While results for the ClO dimer, ClOOCl, photolysis derived from the sunrise evolution of ClO during a self-match flight have been recently published by Suminska-Ebersoldt et al. (Atmosph. Chem. Phys. 12, 1353-1365, 2012) we now present ClO dimer data which could only be derived after thorough laboratory calibrations of the thermolysis efficiency of the HALOX inlet heater element.

Details of the calibration setup and the procedure are presented and preliminary results for the ClO/ClOOCl equilibrium constant are derived and discussed.