



Investigation of MVK oxidation by OH in the atmosphere simulation chamber SAPHIR

Hendrik Fuchs (1), Stefanie Andres (1), Birger Bohn (1), Rolf Häseler (1), Andreas Hofzumahaus (1), Frank Holland (1), Xin Li (1,2), Martin Kaminski (1), Anna Novelli (1), Franz Rohrer (1), Ralf Tillmann (1), Robert Wegener (1), and Andreas Wahner (1)

(1) Forschungszentrum Jülich GmbH, Institute of Energy and Climate Research: Troposphere (IEK-8), Jülich, Germany (h.fuchs@fz-juelich.de), (2) now at: College of Environmental Sciences and Engineering, Peking University, Beijing, China

Recent field campaigns showed concentrations of hydroxyl radical (OH) up to a factor of ten larger than predicted by current chemical models for high OH reactivity and low concentrations of nitric oxide (NO). These discrepancies were observed in forests, where isoprene oxidation turnover rates were large. Methyl-vinyl-ketone (MVK) is one of the major first generation products of isoprene oxidation. Here, we present the investigation of the MVK oxidation mechanism at different nitric oxide concentrations in the atmosphere simulation chamber SAPHIR in Jülich, Germany. Measurements of trace gases included a full set of accurate and precise radical measurements. Results of the experiments are compared to model predictions using the Master Chemical Mechanism and recently suggested new reaction pathways.