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Results from VINTERSOL-EUPLEX: Improved Understanding of Processes governing Arctic Ozone Depletion

F. Stroh and the EUPLEX Science Team

Forschungszentrum Jülich, ICG-I, Germany, f.stroh@fz-juelich.de

EUPLEX was a project funded within the EC Fifth Framework Program under the umbrella of VINTERSOL. The main objective of EUPLEX was a critical test of current hypotheses for key processes within Arctic stratospheric ozone depletion, as there are: 1. PSC formation and properties in Lee-wave and synoptic scale PSC, 2. Halogen activation on PSC, and 3. Chemical ozone loss

The strategy applied was an intercomparison of results of state of the art models (e.g. SLIMCAT/DLAPSE, CLAMS) with high-quality airborne measurements of a wealth of species gathered by instruments onboard the DLR Falcon and the high-flying M55 Geophysica aircraft during a dedicated field campaign in January/February 2003.

These hypotheses tests were carried out very successfully and have led to an improvement of the model reproduction of several processes including PSC formation, de-/renitrification, and halogen partitioning. This enables a more reliable short to medium term prediction of the state of the Arctic winter stratospheric ozone layer. The presentation will give an overview of the results and their implications.