



The GEMS global re-analysis of Ozone for the period 2003-2008

Johannes Flemming (1), Antje Inness (1), Karolien Lefever (2), Olaf Stein (5), Martin G. Schultz (5), Vincent Hujinen (3), and Anja Werner (4)

(1) ECMWF, Reading, United Kingdom (johannes.flemming@ecmwf.int), (2) BIRA-IASB, Brussels, Belgium, (3) KNMI, De Bilt, The Netherlands, (4) Deutscher Wetter Dienst, Hohenpeissenberg, Germany, (5) Forschungszentrum Julich, Germany

A major achievement of the GEMS project is the global re-analysis of atmospheric composition for the period 2003-2008. We will present the inter-annual variability of the global ozone fields, in particular the varying size of the ozone hole over both Poles. We will relate the ozone anomalies to the variability of the meteorological fields. Further, the GEMS re-analysis will be compared with ozone observations from sondes and with other ozone analysis data sets. We will also investigate how the varying availability of observations from individual sensors influences the quality of the re-analysis. The ozone re-analysis has been produced by the assimilation of multiple satellite observations (SBUV-2, OMI, SCIAMACHY, MLS and MIPAS) in to the integrated forecast system (IFS) of ECMWF. For the assimilation of reactive gases such as ozone, the IFS was coupled to the MOZART-3 chemical transport model.