

## Comparison of ozone column amounts calculated with a 3D global model with GOME measurements

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### Abstract

On the 21st of April 1995 ESA's second Earth Resource Satellite (ERS-2) with on board the Global Ozone Monitoring Experiment (GOME) was launched. GOME is a nadir-scanning instrument which measures spectral radiances from which accurate total ozone values can be derived. In this work GOME ozone column amounts were compared with ozone fields calculated with a 3- dimensional (3D) global model. The 3D Chemistry Transport Model KNMI (CTMK) is a global chemistry transport model with currently 19 vertical levels and up to 4 degrees horizontal resolution. It is an off-line model driven by analysed ECMWF (European Centre for Medium-Range Weather Forecasts) wind fields (updated every six hours). CTMK includes a chemistry module with day- and night- time chemistry. In addition, a zonal mean ozone climatology is prescribed above 50 hPa. Total ozone fields have been calculated with CTMK on a day-to-day basis. These total ozone fields are compared with colocated GOME data. First comparisons shows that observed synoptic structures in the ozone fields in the Northern Hemisphere are well reproduced by CTMK. For this intercomparison dynamically consistent GOME total ozone fields obtained with the 2D Assimilation Model KNMI (AMK), were compared with CTMK total ozone fields. However, CTMK generally overestimates total ozone compared to GOME by 25-50 DU. Possible causes of this will be reviewed.

*Keywords: GOME, validation, modelling, total ozone.*