

REPORT ABOUT ENVISAT GOMOS NRT PRODUCTS (GOM_RR_2P) FOR APRIL 2012

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1. Key points for April 2012

- This report covers the period 1-8 April 2012 until the communication with the ENVISAT satellite was lost.
- During this week, the status of the GOMOS instrument continued to be weak, and only a few ozone observations were available at high latitudes in the SH, sampled on 4 April (figures 1 and 2). When available, the number of ozone observations was too low to be statistically significant (figure 3).
- No water vapour data were available in this period.
- Based on the available amount of data, the level of agreement between the observed and modelled ozone was particularly degraded compared with the previous months, with relative first guess and analysis departures from GOMOS ozone data often exceeding 50% at most levels (figure 3).
- The monitoring statistics for April were produced with the operational ECMWF model, CY37R3.

2. Quality and amount of received data

Data coverage and amount of ozone data received between 1 and 8 April are shown in figures 1 and 2. There were no water vapour observations that passed the quality check implemented in the PDS2BUFR filter.

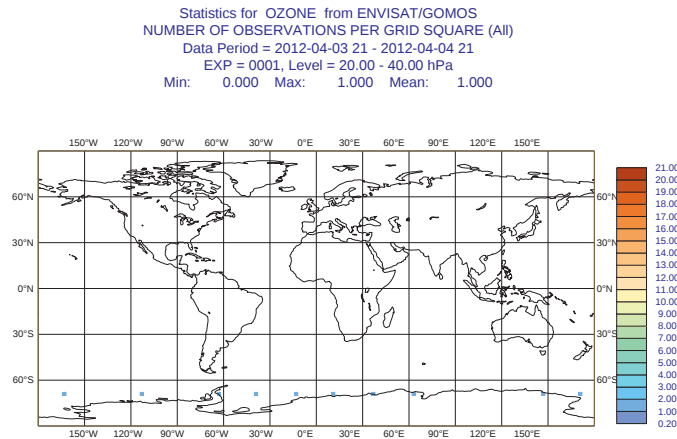


Fig. 1. Geographical distribution of mean number of ENVISAT GOMOS NRT ozone data for layer 11 (20-40 hPa) for 1-8 April 2012.

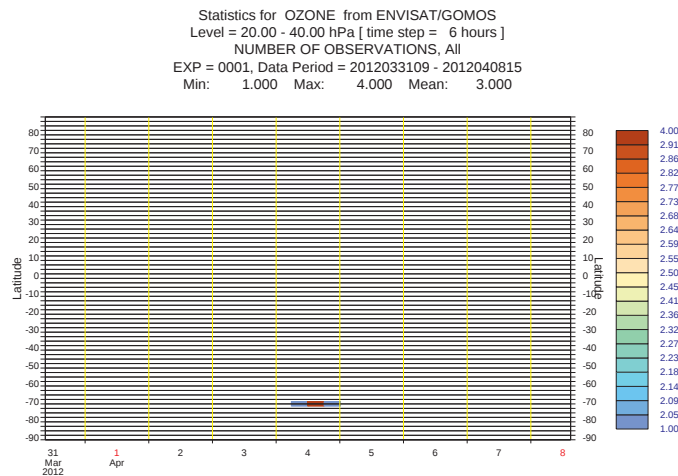


Fig. 2. Hovmoeller diagram of zonal mean number of data of ENVISAT GOMOS NRT ozone data per 6-hour cycle for layer 11 (20-40 hPa) for April 2012.

3. Remarks

This monitoring report was produced with the operational ECMWF model (CY37R3). Ozone layers from SBUV/2 on NOAA-17, NOAA-18, and NOAA-19, and MIPAS ozone profiles were actively assimilated. In addition, SCIAMACHY total column ozone (produced by KNMI), and OMI total column ozone were also used. MERIS total column water vapour (TCWV) has been assimilated since September 2009. Ozone sensitive IR radiances from IASI, AIRS and HIRS have also been assimilated since November 2011.

A variational bias correction for retrieved products became operational in September 2009 in the ECMWF model CY35R3. All the assimilated ozone products (with the only exception of the SBUV/2 and MIPAS data) and the MERIS TCWV were bias corrected.

The results presented in this report made use of only the observations acquired in dark-limb conditions as implemented in the PDS2BUFR converter in May 2007.

All ozone values are in Dobson Units (DU), and water vapour partial columns are in kg/m^2 .

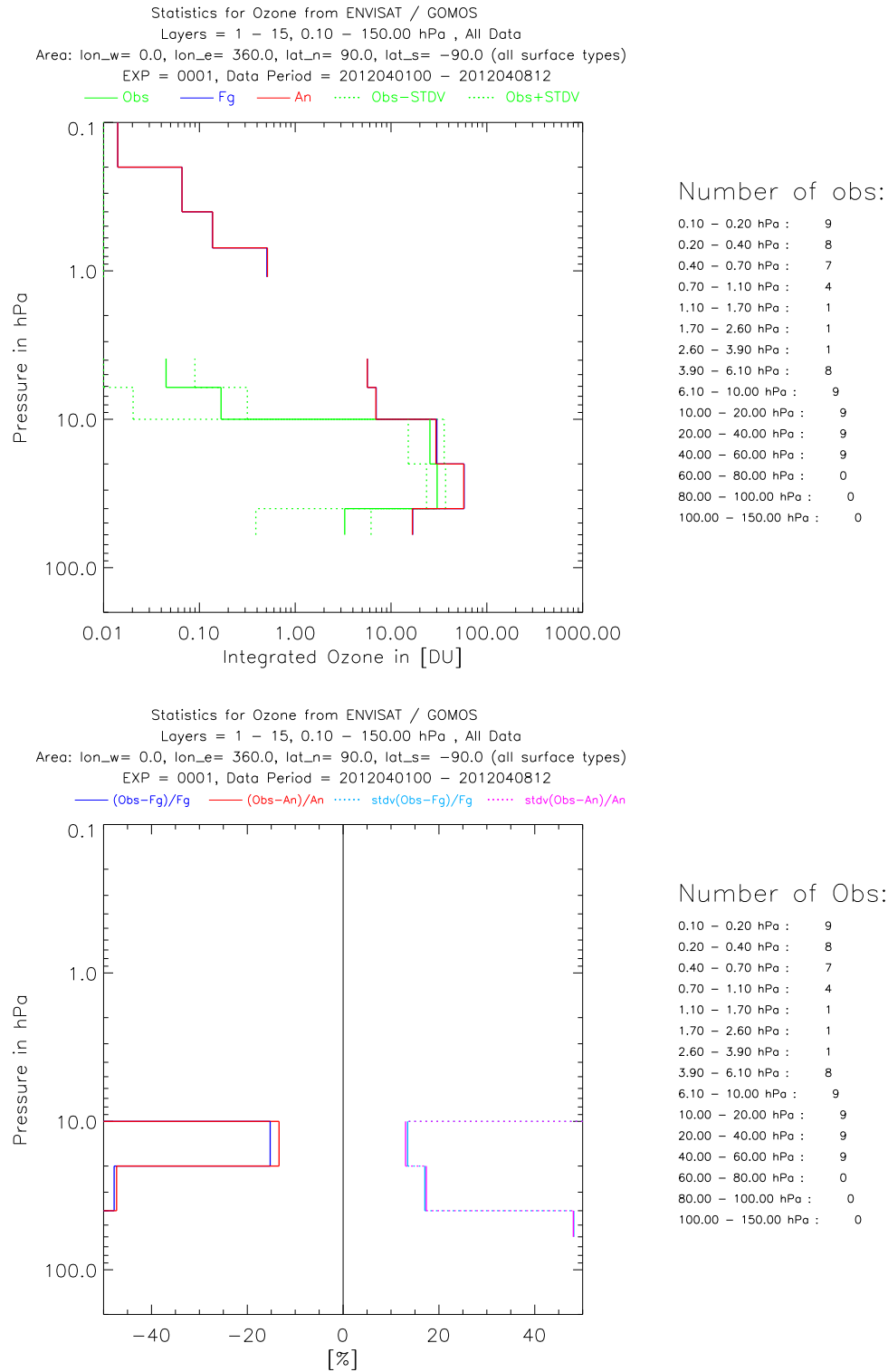


Fig. 3. Time mean vertical distribution of ENVISAT GOMOS NRT ozone data in DU for 1-8 April 2012. The top plot shows the mean analysis values (red), the mean first-guess (blue), the mean observation (red), and the mean observation (green) $\pm$ 1 standard deviation (green dotted lines). The bottom plot shows the departures and the standard deviation of the departures in %. Plotted are the partial columns for the 15 layers listed to the right of the diagrams.