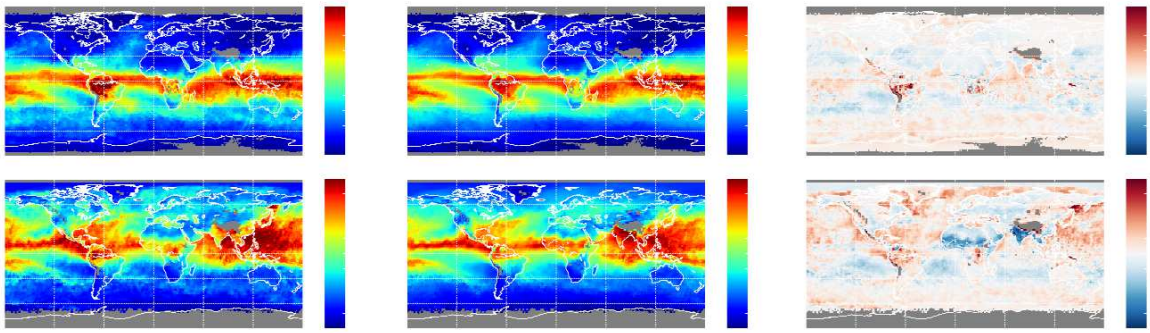

Comparison between the Total Column Water Vapour (TCWV) retrieved with the GOME-2 instrument on board of the MetOp-A satellite and the co-located model data from the ECMWF ERA-Interim reanalysis in February 2013 (top panels) and August 2013 (bottom panels). The TCWV distribution follows the seasonal cycle of the near surface temperature: the H_2O total column has a maximum during the northern hemisphere summer, and a minimum in winter. The GOME-2 retrievals capture the overall spatial variability in the H_2O total column values quite well both over ocean and land surfaces. The mean global bias between the two data sets is rather small: 0.036 g/cm^2 in February and 0.066 g/cm^2 in August 2013. While in February the bias is overall low, in August larger relative differences between GOME-2A and ECMWF ERA-Interim data can be seen. Looking at the bottom right panel of the figure, we can see that an underestimation of the TCWV (blue regions) is located in land areas with a very high humidity. Dry bias is also observed in regions with high surface albedo values, like the Northern Africa, the Arabian Peninsula, India and part of the East Asia and Central America (Grossi et al., 2015). Courtesy: Margherita Grossi (DLR).