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Quality assessment of IASI/Metop-A and OMI/Aura ozone column amounts by using EUBREWNET ground-based measurements

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This work addresses the comparison of IASI (Infrared Atmospheric Sounding Interferometer) on board Metop-A and OMI (Ozone Monitoring Instrument) on board Aura to several ground-based Brewer spectrophotometers belonging to the European Brewer network (EUBREWNET) for the period September 2010 to December 2015. The focus of this study is to examine how well the satellite retrieval products capture the total ozone column amounts (TOC) at different latitudes and evaluate the different levels of Brewer spectrophotometer data.

On this comparison Level 1 and 1.5 Brewer data will be used to evaluate satellite data, where: 1) Level 1 Brewer data are the TOC calculated with the standard Brewer algorithm from the direct sun measurements; 2) Level 1.5 Brewer data are Level 1.0 observations filtered and corrected from instrumental issues. The IASI retrievals examined are operational IASI Level 2 products, version 5 from September 2010 to October 2014, and version 6 from October 2014 to December 2015, from EUMETSAT Data Centre, while OMI retrievals are OMI-DOAS TOC products extracted from the NASA Goddard Earth Sciences Data and Information Services Center (GES DISC).

The differences and their implications for the retrieved products will be discussed and, in order to evaluate the quality and sensitivity of each product, special attention will be put on analyzing the instrumental errors from these different measurement techniques. Furthermore, those parameters that could affect the comparison of the different datasets such as the different viewing geometry, the satellite data vertical sensitivity, cloudiness conditions, spectral region used for retrievals, and so on, will be analyzed in detail.