Contribution submission to the conference Bremen 2017

An improved total and tropospheric NO2 column retrieval for GOME-2 — • Song Liu¹, Pieter Valks¹, Gaia Pinardi², Isabelle De Smedt², Huan Yu², and Steffen Beirle³ — ¹Institut für Methodik der Fernerkundung (IMF), Deutsches Zentrum für Luft- und Raumfahrt (DLR), Oberpfaffenhofen, Germany — ²Belgian Institute for Space Aeronomy (BIRA/IASB), Brussels, Belgium — ³Max Planck Institute for Chemistry (MPI-C), Mainz, Germany

This work focuses on an improved algorithm for the retrieval of total and tropospheric NO2 columns from the Global Ozone Monitoring Experiment-2 (GOME-2). A larger 425-497 nm wavelength fitting window with correction for GOME-2 slit function variations is used to determine the NO2 slant column density. The STRatospheric Estimation Algorithm from Mainz (STREAM) is applied to determine the stratospheric column density of NO2. For the calculation of the air mass factor (AMF), a new surface Lambertian equivalent reflectance (LER) climatology based on GOME-2 observations and the IMAGES a priori NO2 profile are used. Examples of the retrieved GOME-2 total and tropospheric NO2 columns are shown for Europe and Asia.

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