

EGU21-13945

<https://doi.org/10.5194/egusphere-egu21-13945>

EGU General Assembly 2021

© Author(s) 2021. This work is distributed under the Creative Commons Attribution 4.0 License.



Evaluation of tropospheric ozone residual measurements derived from TOMS-V9 and hyper-spectral total ozone algorithms

Jerry Ziemke, Natalya Kramarova, Dave Haffner, and Pawan Bhartia

Code 614, NASA Goddard Space Flight Center, Greenbelt, MD, United States of America (gerald.r.ziemke@nasa.gov)

The NASA TOMS V9 (TOMS-V9) total ozone retrieval algorithm is tested for sensitivity to boundary-layer ozone and suitability to make daily maps of tropospheric ozone residual (TOR). Daily maps of TOR are derived by differencing co-located MERRA-2 assimilated MLS stratospheric column ozone (SCO) from total column ozone from the Aura Ozone Monitoring Instrument (OMI). The TOMS-V9 algorithm uses a few discrete channels with an order of magnitude range in ozone sensitivity. We compare the TOR results from TOMS-V9 with results from several hyper-spectral total ozone retrievals: GODFIT v4 (BIRA-IASB), OMI-DOAS (KNMI), and total ozone from the SAO PROFOZ algorithm. We compare all satellite-retrieved TOR with TOR derived from ozonesondes, lidar, and the Goddard Modeling Initiative (GMI) model simulation.