



Ionospheric ionization calculated from combined SolACES-SDO/EVE solar EUV spectra and comparison with global TEC at different time scales

Christoph Jacobi (1), Claudia Unglaub (1), Gerhard Schmidtke (2), Robert Schäfer (2), Raimund Brunner (2), Tom Woods (3), and Norbert Jakowski (4)

(1) University of Leipzig, Institute for Meteorology, Leipzig, Germany (jacobi@uni-leipzig.de), (2) Fraunhofer IPM, Freiburg, Germany, (3) LASP, University of Colorado, Boulder, CO, USA, (4) DLR-IKN, Neustrelitz, Germany

Ionospheric response to solar EUV variability during 2012 - 2014 is shown by the EUV-TEC proxy based on primary ionization calculations using combined solar spectra from SDO/EVE and SolACES on board the ISS. The in flight calibrated SolACES spectra have been used to calibrate the continuous SDO/EVE measurements. The results are compared with global TEC analyses. We found that EUV describes TEC variability better than conventional indices, especially during periods of strong solar flare activity. At time scales of the solar rotation, there is a time lag between EUV and TEC variability of about one day, indicating dynamical processes in the ionosphere. This lag is not seen at shorter time scales.