

- 8 Update on thermospheric density products from satellite observations *March, G et al.* p-Poster

Günther March[1], Tim Visser[1], Eelco Doornbos[1], Elisabetta Iorfida[1], Jose van den IJssel[1], Pieter Visser[1]
[1]Delft University of Technology, Faculty of Aerospace Engineering, Kluyverweg 1, 2629 HS, Delft, The Netherlands

Thermospheric data collected by satellites observations has improved our knowledge of atmospheric dynamics and coupling processes in the thermosphere-ionosphere region. However, so far, the differences between data sets and models have been generally ignored or adjusted using ad hoc scale factors. To a large extent, the origin of these discrepancies arises from errors in the aerodynamic modelling of the satellite geometry and of gas-surface interactions (GSI). Using high fidelity geometry models, it is possible to explain part of these differences and to improve our understanding of the atmospheric physics. In this presentation, the latest improvements to satellite geometries and particle-surface collision modelling, and their effect on the newly derived thermospheric products are discussed. Thermospheric density data sets from CHAMP, GRACE, GOCE and Swarm missions are compared with available models leading to more consistent density estimates. The updated products are expected to be useful to the thermosphere-ionosphere science community further increasing the understanding of atmospheric dynamics and long-term trends.