Assessment of global and regional VTEC ionospheric maps within IAG's RTIM-WG

Alberto Garcia-Rigo and the IAG's RTIM-WG

Technical University of Catalonia, Barcelona, Spain (alberto.garcia.rigo@upc.edu)

The research conducted within the International Association of Geodesy (IAG) Real Time Ionosphere Monitoring Working Group (RTIM-WG), which is part of IAG's Sub-Commission 4.3 "Atmosphere Remote Sensing", will be presented.

In particular, we will focus on the comparison and validation of real-time and near real-time VTEC Global Ionopheric Maps (GIMs) within the group, as well as regional ones. Results will be validated against independent VTEC measurements from JASON dual-frequency altimeter as well as considering differential Slant TEC (dSTEC) technique, which are explained in Hernández-Pajares et al. 2017 and Roma-Dollase et al. 2017 [Hernández-Pajares, M., Roma-Dollase, D., Krankowski, A. et al. (2017) Methodology and consistency of slant and vertical assessments for ionospheric electron content models. Journal of Geodesy, 91: 1405,https://doi.org/10.1007/s00190-017-1032-z; Roma-Dollase, D., Hernández-Pajares, M., Krankowski, A. et al. (2017b). Consistency of seven different GNSS global ionospheric mapping techniques during one solar cycle. Journal of Geodesy, https://doi.org/10.1007/s00190-017-1088-9]. In this context, we consider the representative period from day of year 45 to 59, 2016.

In addition, we will present an online tool where statistical comparisons will be presented for the different available ionospheric VTEC GIMs as well as results from the above mentioned validation methods after a couple of days. Discussion with the scientific community on interesting aspects to be implemented in the tool is envisaged for this presentation as well.

Finally, we will present the discussion that has been conducted on the different alternatives on the way to disseminate IONEX VTEC maps. In particular, we will show the case of UPC real-time GIMs, which are being distributed via RTCM 1264 internally before being publicly accessible through the Real-Time IGS NTRIP caster.