



Contribution of various components to the enhanced accuracy of GIPSY/OASIS II PPP solutions

Adem G. Hayal (1) and D. Ugur Sanli (2)

(1) Nevsehir Haci Bektas Veli University, Faculty of Engineering and Architecture, Geodesy and Photogrammetry Engineering, (2) Yildiz Technical University, Civil Engineering Faculty, Dept. of Geomatic Engineering, Istanbul, Turkey (usanli@yildiz.edu.tr)

The accuracy of GIPSY PPP has now been revised following the substantial improvements in JPL analysis strategies and product quality after the year 2007. The accuracy improvement in GIPSY solutions was due mainly to the rigorous analysis procedures adopted in computing the satellite orbits in JPL, incorporating single receiver ambiguity resolution among GIPSY modules, and applying a new 2nd order ionosphere modeling. The 2010 positioning accuracy model, which accounts for the procedures prior to 2007 enhancements, was refined in 2015 using a global set of International GNSS Service (IGS) stations and v. 6.3 of GIPSY/OASIS II software. This was just after the reprocessing of JPL final orbit products with second order ionospheric corrections (Oct/Nov 2014). The improvement in regard to precise satellite orbits was previously shared with research community by the NASA. However, comparative contribution of single receiver ambiguity resolution and 2nd order ionosphere correction into the accuracy model has not been assessed yet. Here we perform the so-called assessment and find that contribution of single receiver ambiguity resolution is comparatively greater than that of the 2nd order ionosphere modeling for our particular global sampling.