



## **IVS rapid tropospheric parameter re-combination and comparison with products of IGS**

Cuixian Lu, Julian A Mora-Diaz, Robert Heinkelmann, Virginia Raposo-Pulido, Maria Karbon, Tobias Nilsson, Li Liu, Bededikt Soja, and Harald Schuh

Helmholtz Centre Potsdam GFZ, Section 1.1: GPS / GALILEO Earth Observation, Potsdam, Germany  
(cuixian@gfz-potsdam.de)

Within the International Very Long Baseline Interferometry (VLBI) Service for Geodesy and Astrometry (IVS), zenith total delay (ZTD) and zenith wet delay (ZWD) are the two main parameters of tropospheric rapid combination process derived from rapid turnaround sessions R1 and R4. The rapid combination is weekly conducted about four weeks later after the releasing of observation files on IVS Data Centers, which can be considered to identify and exclude outliers from individuals solutions of the IVS Analysis Centers (ACs) and assess the precision of current VLBI solutions in terms of tropospheric parameters. In this paper, the combination method including outlier elimination process and weighting scheme are illustrated. Then, the recombination of data sets from January 2002 to December 2013 submitted by eight IVS ACs are computed and compared with each other. Besides, a discussion on inhomogeneities and a possible future extension are presented as well. Furthermore, the combined VLBI zenith delays are also compared with products provided by the International Global NavigationSatellite System (GNSS) Service (IGS) for collocated stations.