



VLBI Intensive sessions on a European baseline for the estimation of dUT1

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One of the main goals of Very Long Baseline Interferometry (VLBI) is to provide accurate Earth Orientation Parameters (EOP). One of these parameters is dUT1, the difference between Universal Time (UT1) and the Coordinated Universal Time (UTC). This value cannot be estimated with geodetic techniques using satellites, because of its correlation with the right ascension of the ascending node.

However, very precise knowledge of the Earth orientation is required for a variety of different applications like navigation. Therefore, daily one hour long so called Intensive sessions are scheduled by the International VLBI Service for Geodesy and Astrometry (IVS) to especially provide accurate values of dUT1. To gain highest accuracy it is beneficial to have long baselines in east west direction.

Global Navigation Satellite Systems (GNSS) like GPS or GLONASS could not work properly without those values. Therefore, both the USA and Russia run their own VLBI networks additionally.

In this work we show that it is possible to provide accurate dUT1 values with a European only network, using WETTZ13N (Germany) and RAEGSMAR (Azores). Both are modern, fast slewing VGOS antennas. Therefore the expected number of observations is way higher than with other backup networks. Although the baseline is shorter than in other networks the overlapping sky coverage is larger and together with the higher number of observations, tropospheric parameters, the biggest error source in VLBI, can be estimated better to correct the observations.