



Assessing the Impact of Global GNSS-VLBI Hybrid Observations

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GNSS-VLBI hybrid observations refer to an approach where GNSS signals are received by GNSS antennas and correlated with VLBI correlators. The VLBI-like GNSS single differences (two stations to one satellite) are then analyzed together with standard VLBI observations. In this work, we use GNSS observations during CONT11, a continuous VLBI campaign over 15 days in September 2011. During CONT11, GNSS and VLBI are connected to the identical clocks at seven sites, which mean clock parameters can be regarded as site common parameters. We construct GNSS single differences between the ranges from two stations to a satellite, using post-processed range measurements from a precise point positioning (PPP) GPS solution with the C5++ software. Combining VLBI and VLBI-like GNSS delays during CONT11, we estimate station coordinates, Earth orientation parameters, and site common parameters, i.e. zenith wet delays and clock parameters with the Vienna VLBI Software (VieVS). We compare combined solutions with single technique solutions and assess the impact of GNSS-VLBI hybrid observations with respect to those parameters.