



The IVS combination and evaluation of the derived EOP wrt IGS and IERS

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This paper deals with the combination method of the International VLBI Service for Geodesy & Astrometry (IVS) and the evaluation of the Earth Orientation Parameters (EOP) derived from the IVS combination. Since January 2007, the IVS derives its Earth Orientation Parameters (EOP) through a combination on the basis of datum-free normal equations. In the routine operation, five IVS Analysis Centres submit datum-free normal equations in SINEX format containing station positions and EOP. From this data two types of combined series are computed. The rapid combined series is updated twice a week while the quarterly solution is completely reprocessed with all existing data every three months. Beside the EOP series, the IVS combined normal equations are also made available for combinations with other techniques. As part of the quality assessment, EOP series derived from IVS-combined normal equations are compared with the individual analysis centres' EOP series, which are derived from their submitted normal equations. Furthermore, the IVS-combined and each individual analysis centers' EOP series are compared externally with EOP series of the International GNSS Service (IGS) and of the International Earth Rotation and Reference Frame Service (IERS). Sometimes, differences between IVS and IGS and/or IERS polar motion and LOD exhibit moderate but clear systematics. While the discrepancies in LOD are expected to be due to errors of force modeling in GPS orbits, the discrepancies in polar motion are expected to occur from VLBI as the GPS terrestrial reference frame is much more stable than the one from VLBI. In a careful analysis, the systematic differences in polar motion are discussed in relation to various possible causes in the VLBI data and solution handling procedure.