EARTH ORIENTATION PARAMETERS FROM REPROCESSING AND COMBINATION EFFORTS

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ABSTRACT. In the last few years two major improvements have been achieved concerning the determination of Earth Orientation Parameters (EOP):

(1) A few GPS analysis centers started to reprocess long time intervals (≈10 years) of global GPS data to obtain very homogeneous and much refined time series of EOPs, considerably improving the modeling of the observations (ionospheric corrections of higher order, satellite and receiver antenna phase center patterns, atmospheric mapping function, etc.). The effect of these reprocessing and modeling efforts on polar motion, LOD and nutation rates will be shown.

(2) With various activities (IERS SINEX Combination Campaign, IERS Combination Pilot Project, IERS Call for Long Time Series) the IERS has promoted the rigorous combination of the different space geodetic techniques. Such a combination is not only important to guarantee EOP results referring to a unique reference frame, but it also allows to make use of the complementarity of the space techniques (e.g., UT1 from VLBI densified in time using LOD from GPS). We show results from the CONT02 campaign to illustrate the benefits but also the critical issues of such a rigorous combination of the different observation techniques.

Finally, we will give an outlook at what might be a future, very consistent and highly accurate set of IERS products, resulting from the combination of the space geodetic techniques.

REFERENCES

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