

High resolution Earth rotation parameters determined during the CONT02 campaign

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Abstract

For the two weeks of the CONT02 campaign in October 2002 the Earth rotation parameters, ERP (xpol, ypol, UT1-UTC) were determined with a resolution of one hour by VLBI and also by GPS. Analyses of these two very precise polar motion series reveal oscillations with periods of 8h, 6h and 4h-5h. Rapid oscillations of polar motion with periods of 8h and 5h-6h had already been found in the two-hourly polar motion series determined by GPS (CODE) in the period 1997.5 through 2001.0 but in that time it was unclear whether these phenomena are real or connected with the observational technique, e.g. with effects of the satellite orbits. The detection of the 8h, 6h and 4h-5h oscillations in polar motion independently determined by two accurate space geodetic techniques is a first evidence for a real sub-semidiurnal variation of the ERP. On the other hand the oscillations might still be an artifact stemming from similar methods of data sampling or from unrecovered diurnal drifts in the time series. Oscillations with periods of 8h, 6h, 4h-5h were also detected in the time series of UT1-UTC determined by GPS and VLBI.