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Rapid oscillations of polar motion determined during the CONT02 campaign

J. Nastula (1), B. Kolaczek (1), R. Weber(2), H. Schuh(2), J. Boehm(2)

1. Space Research Centre of PAS, Warsaw, Poland, 2) Institute of Geodesy and Geophysics Vienna University of Technology, Vienna, Austria (nastula@cbk.waw.pl / FAX: +48 22-8403766 / PHONE: 48 22-8403766

For the two weeks of the CONT02 campaign in October 2002 the Earth rotation parameters, ERP (xpol, ypol, UT1-UTC) were determined by VLBI and GPS with a resolution of one hour. First analyses of these two very precise polar motion series had revealed rapid oscillations with periods of 6 and 8 hours but the amplitudes determined by VLBI and GPS were different.

In the present paper the polar motion coordinates determined by VLBI were recomputed and compared with those determined by GPS. The tidal oscillations defined by the Ray model were removed in advance from both series.

Oscillations with periods of 8h, 6h and 4h-5h in these data were revealed again. The common peaks of the retrograde oscillation with a period of 8 h and the prograde period of 6 h were detected in spectra of both, the VLBI and GPS series, and their amplitudes are comparable.

Oscillations with periods of 8h are also determined in spectra of atmospheric and oceanic excitation functions for polar motion. Oscillations with a period of 6h are also present in the spectra of atmospheric excitation functions However, the amplitudes of rapid oscillations of excitation functions computed from geodetic series seems to be much larger than determined from the atmospheric and oceanic data.