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High-frequency Earth rotation variations observed by VLBI from 1984 to 2007

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Diurnal and semi-diurnal ocean tides are the main cause for ultra-short period variations in the Earth rotation parameters (ERP), i.e. in the pole coordinates and dUT1 or length of day (LOD). It has been shown, e.g. by Gipson in 1996, that high-frequency Earth rotation variations can be observed by VLBI. We investigate two ERP time series with hourly resolution from VLBI observational data of the years 1984-2007, using the conventional reference frames ITRF2005 and ICRF Ext.2 as well as an internal VLBI only reference frame solution IGG07R04. After a high-pass filtering of the derived ERP time series the variations of the Earth rotation parameters with diurnal and sub-diurnal periods are accessible. All ocean tidal terms (including sidebands) are estimated, considering also the contribution of the atmospheric tides S1 and S2. We compare our results to the IERS 2003 conventional model and assess residual spectra.