



Sub-diurnal variations in Earth rotation from continuous VLBI campaigns

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Previous investigations of high-frequency variations in polar motion and universal time observed with continuous VLBI campaigns showed that most of the variations can be explained by a model that is recommended by the International Earth Rotation Service (IERS). This model is based on ocean tidal angular momentum exchange. However, there are still significant oscillations left when the model values are subtracted from the observed values. The remaining signals have mainly diurnal and semi-diurnal periods, and for some continuous VLBI campaigns even ter-diurnal periods could be detected. Furthermore, do different continuous VLBI campaigns give slightly different results.

We therefore investigate whether other models for high-frequency variations in polar motion and Earth rotation, both caused by ocean tidal and atmospheric angular momentum exchange, show a higher degree of agreement with the results from the continuous VLBI campaigns. We also investigate whether there are artefacts caused by the VLBI data analysis that impact the results. These comparisons between modeled and observed variations are addressed both in the time and frequency domain and include several continuous VLBI campaigns.