



Long-term simulations of polar motion: Variations of the Chandler oscillation over two centuries

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The Earth Rotation Parameters (ERP) polar motion and length-of-day have been observed with very high precision using space-geodetic techniques over many decades. Temporal changes of ERP on various temporal scales are directly connected with geophysical processes in the Earth system. Here we focus on long-term changes of polar motion, in particular on the development of the Chandler oscillation over a time-frame of two centuries. The study will be performed using five equiprobable ensemble runs of the consistently coupled atmosphere-hydrosphere model ECOCTH (1860-2060). Five respective long-term simulations with the Dynamic Model for Earth Rotation (DyMEG) result in five realizations of the Chandler oscillation. These will be analyzed for similarities and differences using different statistical methods and tools of signal analysis, e.g. wavelets. Furthermore it will be studied in which way the long time series of polar motion reflect effects of climate change as described by ECOCTH.