



Analysis of regional hydrological excitation functions on polar motion based on the available models of land hydrosphere

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The changes in the global balance of the Earth angular momentum due to the mass redistribution of geophysical fluids are still tested to understand the observed polar motion. The impact of continental hydrologic signals, from land water, snow and ice HAM (Hydrological Angular Momentum) on polar motion excitation is not so well known as atmospheric and oceanic ones. Hydrological angular momentum have been estimated in several models of global hydrology.

It is known that the global hydrological excitation functions determined from available models of land hydrology are different and none of these hydrological excitation functions improve the agreement between geodetic and geophysical excitation functions.

In this paper, we demonstrate the impact of regional HAM selected land regions of the Earth on polar motion excitation. These regional hydrological excitation functions are compared in seasonal scale and differences between them are shown.

In our consideration we use the following global models of land hydrology: NCEP/NCAR, CPC, GLDAS, LSDM, NOAA and data from the Gravity Recovery and Climate Experiment (GRACE).