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Periodical climate variations and their impact on Earth rotation for the last 800Kyr

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The Earth rotation variations are highly affected by climatic variations associated with the glacial cycles in the late Pleistocene. The processes of glaciation, followed by ice melting, are connected with significant changes of the mean sea level. These processes redistribute great amount of water masses between oceans and ice sheets, which lead to changes of the axial moment of inertia and corresponding variations of the Universal Time UT1 and Length of Day LOD, according to the law of angular momentum conservation. The climatic variations for the last 800Kyr are analyzed by means of time series of temperature changes, determined by deuterium data from Antarctica ice core. Reconstructed glacial sea level variations for the last 380Kyr, determined by the sediments from the Red sea, are used, too. Common periodicities of the temperature and mean sea level variations are determined. Time series of the long-periodical UT1 and LOD oscillations for the last 380Kyr and 800Kyr are reconstructed by means of empirical hydrological model of global water redistribution between the ocean and ice sheets during the last glacial events.