



## **Fundamental astronomical aspects of forecast of the Earth rotation parameters**

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On the basis of celestial- mechanical approaches and asymptotic methods of nonlinear mechanics new results on research of the forced rotational oscillations of the Earth, adequate to observations and changes of rotational parameters have been obtained. Optimal estimations of trajectories of motion of a terrestrial pole on various intervals of time, including intradaily and quasy-diurnal oscillations of the pole and intradaily non-uniformity of axial rotation of the Earth are resulted.

With the purpose of increase of accuracy of interpolation and the forecast of non-uniformity of

the Earth rotation on short intervals of time are taken into account corrections on zonal tides with small amplitudes, that in turn affects on variations of the world time UTI which is connected with rotation of the Earth and is rather important characteristic demanding permanent measurements. It is shown, that the developed mathematical models of non-uniformity of the Earth rotation, can be effectively used for construction of the forecast of global component of the angular momentum of atmosphere.