



Sumatra earthquake and Earth rotation

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The giant earthquake of December 26 2004 off the west coast of northern Sumatra is likely to have affected Earth rotational parameters. A preliminary analysis of data obtained by Satellite Laser Ranging technique evidenced a step discontinuity of (1.5 ± 0.4) mas in the instantaneous pole path in correspondence with the earthquake occurrence. Since a step-like temporal dependence is not compatible with the action of an earthquake on the inertia tensor, we test the hypothesis that the effect isn't due to the excitation associated with the seismic rupture but instead to the water mass redistribution associated with the tsunami occurred after the earthquake. In order to quantify this effect, we used a synthetic numerical tsunami model to compute the excitation function associated with the tsunami wave propagation and therefore we compute the associated variation of the instantaneous pole path.