

Interactive comment on “Earth’s rotation variations and earthquakes 2010–2011” by L. Ostřihanský

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I suggest the reading of the paper Riguzzi, Panza, varga, Doglioni published on Tectonophysics 484 (2010)

Can Earth’s rotation and tidal despinning drive plate tectonics?

Abstract We re-evaluate the possibility that Earth’s rotation contributes to plate tectonics on the basis of the following observations: 1) plates move along a westerly polarized flow that forms an angle relative to the equator close to the revolution plane of the Moon; 2) plate boundaries are asymmetric, being their geographic polarity the first order controlling parameter; unlike recent analysis, the slab dip is confirmed to be steeper along W-directed subduction zones; 3) the global seismicity depends on

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latitude and correlates with the decadal oscillations of the excess length of day (LOD); 4) the Earth's deceleration supplies energy to plate tectonics comparable to the computed budget dissipated by the deformation processes; 5) the Gutenberg–Richter law supports that the whole lithosphere is a self-organized system in critical state, i.e., a force is acting contemporaneously on all the plates and distributes the energy over the whole lithospheric shell, a condition that can be satisfied by a force acting at the astronomical scale. Assuming an ultra-low viscosity layer in the upper asthenosphere, the horizontal component of the tidal oscillation and torque would be able to slowly shift the lithosphere relative to the mantle.

Interactive comment on Solid Earth Discuss., 4, 33, 2012.

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