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Earth's rotation variations and earthquakes 2010

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The LOD (length of a day) graph for 2010 was characteristic by extremely large (1.5 ms) Earth's deceleration peaks in rhythm of 27.6 days. This triggered strong earthquakes in Central America, South American plate and Indian plate. The LOD measurement revealed that the Haiti earthquake of January 12, 2010 7.0 M occurred exactly in the time of Earth's acceleration. This earthquake is situated on the left-lateral transform fault and reflects the quicker westward movement of the North American plate against the South American. On the northern hemisphere the Chandler wobble and the accelerating Earth leaving continents owing to inertia behind are important contributors to westward drift. The GPS measurement performed before and after the Maule Chile earthquake M 8.8 of February 27, 2010 has shown that the southern part of the South American continent has moved westward 2-4 cm and in the city of Concepcion the collapsing movement reached 3.04 m. This movement was attributed to tidal friction, which acts as a force couple against the Earth's rotation and decelerates it. The action of this force moves also the lithosphere westward what is evident from following aspects: The earthquake occurred in distinctive Earth's rotation deceleration according to LOD measurement. The large area of ocean waters in southern hemisphere determines the tidal friction as a dominant force. The action of this force is external because it acts on the whole area of the South American plate as far as the Mid-Atlantic ridge. Till now the GPS measurements in ITRF2005 reference frame found the South American plate as almost stable because this reference frame considers the lithosphere as stable and not the mantle, above which plates move. This GPS measurement excluded the mantle convection as driving agent because subduction zones of the Nazca plate and of the Scotia Sea basin contradicts to such movement. The northward movement of the Indian plate is contributed to the Eötvös which is proportional to the Earth's rotation in second power. Similarly as the Great Sumatra earthquake 2004 was triggered in distinctive Earth's rotation acceleration, earthquakes on the Indian plates in 2010 in many cases were triggered in Earth's rotation acceleration following the Earth's deceleration.