

I agree that tidal stresses are easily detectable by strain meters, gravimeters and tidal recorders. They are tidal stresses of semidiurnal $4 \cdot 10^3$ Pa and of biweekly $8 \cdot 10^3$ Pa (Bodri and Iizuka 1989). Theoretically LOD variations stresses are calculated only 0.1 Pa (Wahr, 1985, Gipson and Ma 1998, Wang et al. 2000). However Wang et al. (2000) further claims that observed LOD – correlated stress is of the order $10^4 - 10^5$ Pa. Tidal stresses create only tidal wave moving over the Earth whereas LOD variations shake with the whole Earth body and the lithospheric plates exert torques in values proportional to the size of the plate. For example, considering stress 0.1 Pa, the continental plate thickness of 300 km and length 10 000 km situated on equator exerts variable torque $\approx 2 \cdot 10^{20}$ N m. Both earthquakes Sumatra 2004 and 1985 in the time span 19 years of Meton's cycle were triggered exactly in maximum Moon's declination and close to winter solstice when also the Sun's declination is high and in the full Moon when Sun, Earth and Moon were in line. Calculating effect of precession (Stacey, 1977; Brož et al. 2011) we receive that the Sun exerts torque $M_s = 5.7 \cdot 10^{21}$ N m and the Moon $M_m = 1.2 \cdot 10^{22}$ N m. Summation gives $M = M_s + M_m = 1.8 \cdot 10^{22}$ N m. From this is evident that external torques rectify the Earth's flattening to the plane of Moon's orbit and ecliptic and also move with the plates. Other important torque the tidal friction causes torque $N_s = 8.9 \cdot 10^{15}$ N m and $M_m = 4.2 \cdot 10^{16}$ N m. $M = M_s + M_m = 5.09$ N m (Burša 1987). Explanation offers consideration of other forces acting among plates, ridge push and slab pull (Forsyth and Uyeda 1975), i.e. hydrostatic pressure in mid-ocean ridges periodically opened by LOD variations and the fall by gravity of subducted plates.

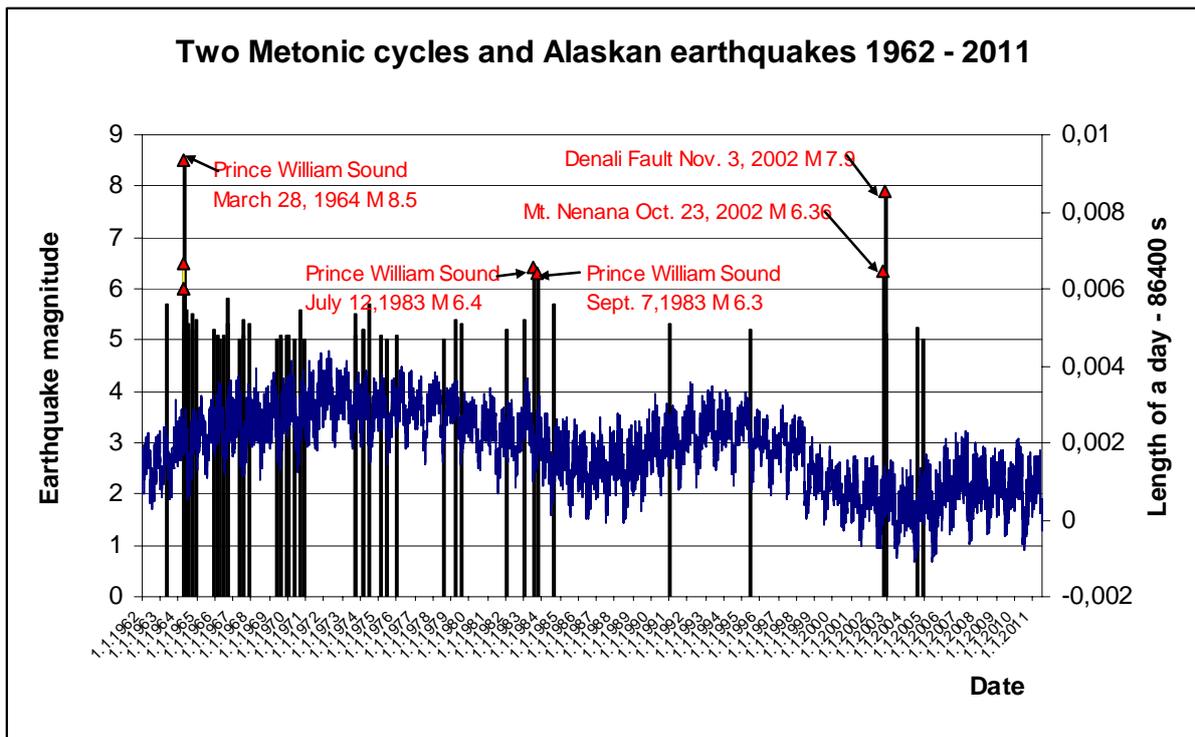


Figure: In Riguzzi et al. 2009 it is claimed that as LOD increases the number of earthquakes is higher and vice versa. This figure shows that it is true for the first period 1964-1983 of Meton's cycles. But the second period with Denali Fault earthquake shows on the contrary low LOD and increment of earthquakes. In westward moving plates the relation of increment LOD and earthquakes prevails. In northward moving plates (Indian, African) the low LOD coincides with large number of earthquakes, as it is shown in discussion paper. (Triangles mark earthquakes over M 6. The investigated area covers rectangle 60° N – 65° N, 146° W - 149°W with Anchorage and Fairbanks).