1	G_ET Symposium 2016
2	Long Period Tide Variation from Satellite Laser Ranging (SLR)
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10	The satellite laser ranging (SLR) over four decades has recorded the global nature of the long-
11	wavelength mass change within the Earth system, in particular, the Earth's dynamical oblateness,
12	characterized by the second degree gravitational zonal geopotential spherical harmonic $J2$. The SLR
13	tracking data is a unique space geodetic measurement capable of characterizing the 18.6-yr tide variations
14	in the solid earth and ocean, which produce the variations in J2 with different amplitude and phase.
15	Analysis of the most recent time series of 30-day SLR-based estimates of J_2 yield a nominal anelasticity
16	Love number estimate of $k_2 = 0.31107 \pm 0.0011$ with the IERS model of the frequency dependent Love
17	number at 18.6-yr period from the reference frequency $\omega_m = 200$ seconds and $\alpha = 0.155$ for mantle
18	inelasticity. The effects of the mantle inelasticity of the solid earth must be considered in modeling of the
19	response of the global ocean to the lunar attraction at the 18.6-yr period. Results show that the mantle
20	effects produce a deviation by ~0.09 cm in amplitude and ~2.5° in phase from the equilibrium ocean with
21	elastic response model.