



Long-term mass variations from SLR, VLBI and GPS data

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The second-degree geopotential coefficients reflect the behaviour of the Earth's inertia tensor of order 2 which describes the main mass variations of our planet impacting polar motion and length of day (EOP).

SLR, VLBI and GPS allow the estimation of those variations, either directly in the case of SLR through its dynamics, and indirectly, for all the three geodetic techniques, by deriving excitation functions from the EOP estimations. The geodetic estimates include the influence of the Earth's atmosphere and oceans, both from their mass and motion components, which can be modelled using the atmospheric and oceanic angular momenta variations.

The different C21, S21 and C20 geodetic time series are compared in order to evaluate their coherence and their response to the mass variations after the removal of the motion terms. Moreover, the residual signal contents of the geodetic values, deprived by the atmospheric and oceanic mass and motion components, will be investigated.