



Determination of geocenter motion from SLR data

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Mass redistribution on the Earth affects the position of its center of mass whose translations, relative to the International Terrestrial Reference Frame (ITRF), range from a few millimeters to centimeters. This translation is generally referred to as “geocenter motion” and can be estimated from the degree one unnormalized Stokes coefficients.

The most recent and updated ASI/CGS analyses of SLR data, spanning more than 25 years, from several geodetic satellites (Lageos I-II, Stella, Starlette, Ajisai, Etalon I-II) provide dynamic time series of monthly estimates of the first degree geopotential coefficients.

The dynamic time series will be compared with the geocenter offsets from a conventional origin as determined by the translations of the weekly ILRS coordinate time series w.r.t. to ITRF. The ILRS loose solutions, indeed, are determined in a satellite-based reference system whose origin is naturally located in the center of common mass (CM).

This work will show and discuss models, results, accuracies and spectral content.