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Analysis of C21 and S21 time series over long periods of time from SLR data

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In this paper, we use SLR data tracked by the ILRS network over the last thirty years to derive time series of Earth Orientation Parameters, and some of the low wavelengths of the Earth's gravity field, namely the degree 2. The work is based on parameters deduced from weekly or monthly orbital arcs of the constellation of geodetic spherical satellites, that are adjusted to the tracking data, following the parameterization used to contribute to the new ITRF, as an ILRS Analysis Center.

We focus mainly on the analysis of the C21 S21 time series. We study the impact of the choice of the a priori coordinates of the mean celestial pole on the results, by following or not the IERS conventions for these values. The time series are also compared to pole coordinates (geodetic excitation), and to geophysical models.