



Combined geocenter motion model from the SLR, GNSS and GRACE observations

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Mass redistribution within whole Earth causes variations of the Earth's center of mass (CM) with respect to the center of figure (CF) which in turn is recognized as the origin of the International Terrestrial Reference Frame (ITRF). Time series of the center of mass changes can be determined on the basis of the observations providing by the satellite geodesy techniques such as Satellite Laser Ranging (SLR) and Global Navigation Satellite System (GNSS). Changes of the CM with respect the CF can be also represented by variables first degree geopotential coefficients (C_{10}, C_{11}, S_{11}) which can be obtained from the GRACE gravity mission. In order to designate agreement between time series of geocenter motion from satellite geodesy and from GRACE first degree coefficients of geopotential, the spectra-temporal analyses were applied. The compatibility in the annual oscillation band between analysed geocenter time series was detected, which enabled computation of the combined geocenter motion model based on satellite geodesy techniques as well as GRACE gravity mission.