



On a new approach to the estimation of the low-degree zonal harmonics secular variations

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The use of laser-ranged satellites in order to determine the geodetic parameters and study their main time variations has been, and still is, one of the most important activities to monitor the dynamics of Earth. In particular, the study of the time dependency of Earth gravity field represents a way for a correct interpretation of the very complex interaction within the Earth system. The knowledge of the temporal variations in the low-degree zonal harmonics coefficients represents a further step in order to perform such fundamental studies on Earth dynamics. Indeed, the measurement of the time variations of Earth gravity field represents an important tool for the validation of the geophysical models that are developed for the Earth. We propose a new approach to the estimate of the low-degree zonal harmonics secular variations using the LAGEOS's satellites node and argument of perigee and the most recent gravity field models obtained from CHAMP and GRACE space mission.