



Time variation of the geoid's gravity potential value W_0 , Sea Surface Topography (SST), and the marine geoid based on modern satellite altimetry and satellite gravimetry missions

A. A. Ardalan, H. Hashemi

Department of Surveying and Geomatics Engineering, Center of Excellence in Surveying Engineering and Disaster Prevention, Faculty of Engineering, University of Tehran, P. O. Box: 11155-4563, Tehran-Iran, Tel: 0098-21-82084383, Fax: 0098-21-88337642 (ardalan@ut.ac.ir)

Combination of (i) satellite altimetry derived Mean Sea Level (MSL) models with (ii) satellite gravimetry based geopotential models, for the computation of the geoid's gravity potential value W_0 , global Sea Surface Topography (SST), and the marine geoid is investigated. Using the repeatability property of the satellite gravimetry observations, possibility of determination of the time variations in the geoid's gravity potential value W_0 , SST, and the marine geoid are studied. As the sources of input information, KMSS04 global MSL model and GRACE Level-2 data products are used. Time variations of geoid's gravity potential value W_0 , SST and the marine geoid along with the corresponding statistical test for the significance of the derived time changes are presented.