Geophysical Research Abstracts,
Vol. 10, EGU2008-A-10328, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-10328
EGU General Assembly 2008

Low-degree gravity field harmonics coefficients derived from IGS stations

M. A. Sharifi(1), V. Nafisi(1,2)

(1) Department of Surveying and Geomatics Eng., University of Tehran, Tehran, Iran, (2) Department of Surveying Eng., Faculty of engineering, University of Isfahan, Isfahan, Iran (Nafisi@eng.ui.ac.ir)

The launch of the earth's gravity field dedicated missions, i.e., CHAMP and GRACE has opened up a new field of research to geoscientists. Recovery of the gravity field up to the medium wavelength is the primary scientific goal of the missions. Publicly released solutions show success of the missions.

Alternatively, IGS stations with their global nearly uniform distribution provide valuable information on the earth crustal deformation. The observed changes can be interpreted purely from geometrical perspective. Moreover, coordinates time-series are mapped to the low-degree harmonics of the Earth's gravity field and their temporal variations.

Comparison of the gravity field changes derived from GRACE mission with that of the IGS stations is the main goal of this article. Solution derived from 131 IGS stations' observations on 2004 shows a very good agreement with that of the GRACE solution. This paper also focuses on the statistical method for evaluating recovered coefficients from IGS observations.