



Variations of geoid undulations from satellite data of GRACE for Israel and surrounding countries

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Since 2002, the US-German GRACE satellite mission (Gravity Recovery and Climate Experiment) has been providing a precise survey of the Earth's time-variable gravity field, with unprecedented temporal and spatial sampling. GRACE time-variable gravity field is a tool for measuring temporal and spatial variations of the mass redistribution within the Earth system. Time variability of the gravity field is presented here as "monthly gravity field models" of the geoid undulations. We show their regional variations in Israel and surrounding countries which have seasonal and secular character, connected with desiccation of underground water in the area. During 13 year interval of the data from GRACE, the secular decrease of the level of the waters in this area became evident. This result supports warnings coming from other data and points to the existence of a great danger not only for this area.