Comparison the terrain correction in Hammer method and FFT and study for possibility of using wavelet transform for this correction

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The aim of this article is to study the terrain corrections for gravity stations. The reason of these anomalies is topography near the station. Determinations of this correction and studying different methods in gravity have considerable importance.

Wavelet transform in DTM could be used in order to interpolation and suitable resolution in a huge amount of data. Converting HAR wavelet transform is studied for this process in order to gain suitable terrain data for terrain correction and other applications. Also prism method which converts topographic mass to point mass is studied, and FFT method as a fast method applied for large scale areas.

Determination of this correction is presented in both prism and FFT methods with written programs based on synthetic data, designed in pyramidal shape. And also a real example of an area in Iran is studied and the results are compared.

Also results of these two methods are compared with results from Hammer method.

Key words: terrain correction, topography, gravity corrections, wavelet, FFT transforms, prism method.