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# Improved Earth Model for Geoid Determination

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It is believed that the closer the Earth model to the complex reality, the more precise is the computed geoid. Hence, this paper tries to implement an improved Earth model in the geoid computation process. Recently, better data sets of seismic Moho depths using different schemes and algorithms were made available. In addition, density models for different layers of the Earth's crust have been developed lately. These two types of geophysical information are used for a gravimetric geoid computation of Austria. Homogeneous seismic Moho models for the area under investigation have been developed. Models for variable density for the Earth's crust have also been created employing equal mass principle. The isostatic floating hypothesis has been postulated throughout the geoid computation process. The values of the variable density contrast have been computed using the principle of mass balance when using seismic Moho depths in the geoid computation process. Different gravimetric geoids for Austria have been computed within this investigation using various combinations among the available data sets (gravity, height, seismic Moho, variable crustal density). A wide comparison among the derived geoids computed within the current investigation has been carried out in terms of both reduced gravity anomalies and computed geoid undulations.