



A new geoid model for Tierra del Fuego (Argentina) by means of the Equivalent Source Technique

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Tierra del Fuego is the southernmost province of Argentina. Several efforts have been made in order to produce a regional geoid model.

At the beginning, geoid models were exclusively, gravimetric or geometric. In 2010 a geoid model was computed using the Equivalent Source technique (EST) reaching a 6 cm geoid in almost the entire island. In this case GPS/levelling data was combined with gravity data.

Other information was also available: the mean lake level surface of Fagnano Lake which allows using it as a level surface. This lake has a 100 km long in the east-west direction and its mean surface was determined using GPS buoys and tide gauge observations.

In this work, we present the evolution of the developed geoid models till the most recent one, including the analysis made over the information provided by the lake. This analysis show that when comparing observed geoid undulations, against those obtained with the geopotential model EGM2008, reveals an anomalous behavior in the lake, in contrast to land observations. We also put special care in the quality and density of lake level data.

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