

ABSTRACT

The Cerdanya basin is an ENE-WSW oriented half graben, located in the NW block of the Tet fault, in the Eastern Pyrenees. Its approximate dimensions are 30 km long and 7 km wide. Nowadays, the Cerdanya basin is considered a geological structure of particular interest since its geometry has not been completely studied.

Gravimetry is an important tool in geophysics since it allows to determine the distribution of densities of formation rocks through measurements of gravity anomalies at the surface. Accordingly, based on the available technical information of the Cerdanya basin, a 3D geological model of the Cerdanya basin was developed in 3D GeoModeller software, with focus on the analysis and modelling of the gravimetric response of the model.

Consequently, the 3D geological model of the Cerdanya basin contains essential characteristics of the formations involved, which made it possible to reproduce the geometry of the basin and obtain a gravimetric response of the model. The resulting gravimetric response of the model is predominantly consistent with the observed data. Given the simplification of this model, adding complexity to the model, which is out the scope of this work, will help to adjust more effectively the calculated anomalies to the observed ones.