Geophysical Research Abstracts, Vol. 9, 00394, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-00394
© European Geosciences Union 2007

3-D joint inversion of gravity and resistivity data collected in sedimentary environment

P. Represas and F. Monteiro Santos

Universidade de Lisboa and Centro de Geofísica da Universidade de Lisboa
(prepresas@fc.ul.pt)

The integrated use of different methods is becoming a standard in applied geophysics. According to several authors the calculation of a less ambiguous final model is the most significant advantage in using integrated geophysical methods. In this communication an algorithm for the joint inversion of gravity and resistivity data acquired in sedimentary basins is presented. A three-dimensional distribution of the model parameters is assumed. In order to perform the joint inversion, the subsurface is divided in layers. The interfaces between layers represent the position of the density/resistivity contrast zones. The density of the layers is considered constant but its resistivity is allowed to vary. The algorithm was tested with synthetic data and applied to a resistivity/gravity surveys carried out in NE Portugal.