



## **2-D gravity modelling as a method of searching for deep-seated horizontal density contrasts in the Earth's crust**

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The poster presents method of localisation the major horizontal density boundaries in the plane of 2-D seismic velocity cross-section. The method was based on the analysis of discordances in gravity modelling using conversion of seismic P-wave velocity distribution into density. The conversion assumes some reference velocity-density relation and next optimisation procedure is performed for small density corrections in each of seismic layers. In some cases this procedure doesn't lead to a satisfactory model of the observed gravity field. Usually this difficulty is caused by presence of some horizontal density contrasts inside seismic layers which are not described (or not properly described) by the velocity distribution and geometry of the layer system. Thus the preferred solution of such difficulty has a form of a divisions of some seismic layers by vertical lines. The criterion for a choice of position of the dividing lines is not an easy problem when we try to fulfil tectonic expectations which would make the results convenient and fruitful for interpretation. The proposed procedure searching for division lines is based on comparison of the residual field derived from gravity modelling with a model field of a simple horizontal density contrast. The method was exemplified using Carpathian DSS profile CEL01 known for large difficulties in its gravity modelling, to illustrate how the procedure acts in a real case.