FACING UP GEOLOGICAL IDEAS TO GEOPHYSICAL MODELS WITHIN NORTH DOBROGEA,ROMANIA

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North Dobrogea zone hosts the oldest mountain chain within Romania. Since the middle of the last century, various geological models for the area have been constructed. Basically, an intra-cratonic orogene, squized between the Scythian Platform and the Moesian Platform has been accepted as a geotectonic model for this region. Major difficulties have been encountered within geological survey due to the loess deposits covering the almost part of the region and the numerous metamorphical phases that affected the background rocks. During the last 40 years, regional and detailed geophysical investigations have been added to geological ones as a help in deciphering the geological structure of the area. Magnetics, gravity, seismics, geoelectrical and electromagnetic methods, heat-flow studies, etc. were performed in order to clarify some problems. Despite more than 150 years of geological investigation still there are a lot of open questions starting with the genesis and evolution of this area.The paper mainly deals with a review of the evolution of the geological ideas during the years by comparing each of them to the nowadays-available geophysical data. Interesting good or miss-corelations have been found and carefully analyzed. Various geophysical models, mainly based on 2D and 3D gravity and geomagnetic data interpretation have been produced in an attempt to clarify aspects related to the unsolved problems. The presence of hidden magmatic bodies and the geological structure peculiarities have been pointed out by geophysical modeling. Contacts with Moesian Platform and Scythian Platform and northwestward extension of the Paleozoic structures, beneath the Carpathian foreland deposits were outlined and discussed. The impact to the Alpine Carpathian chain within the Vrancea seismogene area is also discussed.