

NEW OPPORTUNITIES 3-D GEOLOGICAL MODELING ON AIRBORNE AND GROUND GEOPHYSICAL SURVEYS.

PAVEL S. BABAIANTS, YURI I. BLOKH, State scientific-production enterprise Aerogeophysica, Russia, Moscow

Last years in Aerogeophysica (Russia) was developed system geological interpretation data of aeromagnetic survey in a complex with results airborne and ground gravity survey is successfully maintained. For increase reliability of interpretation the geological information and data of other geophysical methods, first of all seismoreconnaisances is involved a priory. In a basis system of interpretation the original algorithm automated 3-D modeling of potential fields is fixed. Besides, the special methods of the analysis 2-D spectrum Fourier of a magnetic field allow to construct a relief of active magnetic surface, which can be in most cases associated with a surface of crystal base. The sharing of the mentioned algorithms allows: to create 3-D geological model structure the top part crystal base; to estimate material structure of formations base by 2-D classification data about magnetization and density; to execute the reduction of magnetic field with exception influence a field of model the base; the residual field, received in result, appreciably is caused by a structure sedimentary cover and can be substantially interpreted. In relation to a local field the described technology represents a method division of fields by approximation regional component by field of sources. It allows using for interpretation of the rest both statistical, and quantitative methods. The described system of interpretation with success is used at geological mapping territories of ancient and young platforms, searches deposits of oil and gas, diamonds and other kinds mineral raw material.