

## **Analysis of the magnetic field of the Strumica depression**

Author: Delipetrov Todor Co-author : Karakasev Deljo

Faculty of Mining and Geology , Stip 92000

Republic of Macedonia

Terrane measurements of the total vector of the magnetic field were carried out in addition to earlier measurements in order to define the geophysical model of the Strumica depression. The fairly good knowledge of the structural composition of the area under investigation made possible the testing of a new approach in separating the regional from the local influence of the magnetic field expressed as

$$\Delta T = \Delta T_R + \Delta T_L$$

Mathematical principles on which the theory of regression curves is based and the general procedure in separating the regional and the local anomaly (in all geophysical fields) allow for the regression analysis to be applied as a method in separating the regional from the local component of the field.

If the regression curve is  $y = f(x)$ , then the values define the regional component, whereas the remainder of the regression curve and the field define the local component. The selection of the regression curve represents a particular problem.

The mathematical approach includes defining a regression curve with minimum deviation. The present authors, however, made a selection of regression curve which was the most suitable manner because of the structural and geological composition of the Strumica depression. Results obtained display that in the mathematical procedure of analysis of the field of regional and local anomalies one can get better results if other geological understandings are taken in consideration.