

**O10-7**

**SOME NEW RESULTS OF THE ANALYSIS OF THE  
ALCALA DE EBRO VILLAGE ( ZARAGOZA, SPAIN)  
GRAVITY ANOMALY WITH A SET OF  
ELEMANTARY SOURCES**

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Several terrain collapses took place in the last years inside Alcala de Ebro village (Zaragoza, Spain). Ebro River is close to the village and acts on this zone in an active way. The existence of cavities filled with water or sediments is supposed. The depth of these cavities may be around 12 to 20 m. Besides there are no other geological studies in the area that provide more information. That is why, we tried to use the available geophysical informations for this purpose. The Alcala de Ebro (Zaragoza) gravity anomaly was studied with a set of point masses model (Zidarov, 1968 ; Zhelev, 1972 ; Zidarov, 1980; Zhelev, at al., 1996). After a preliminary polynomial approximation to eliminate the main part of the regional trend (so that to ease the optimization process) the local gravity anomalies together with the rest of the trend are modelled with a set of elementary point sources and a linear trend. The unknown parameters of the suggested model are determined through optimization. The obtained results seems to be quite in agreement with carstic cavities filled with water or sediments supposed to be at depths of 12 to 20 m. and the terrain collapse taken in the last years in this region (Alcala del Ebro village - Zaragoza, Spain).

#### **Acknowledgements**

A part of the present investigations are carried out:

- with the partical support of the National Foundation for Scientific Research of the Ministry of Education, Science and Technology of Bulgaria,
- with the support of the National Foundation for Development of Technical and Scientific Research of Spain.

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