

**O16-1****TECTONICS AND HEAT FLOW IN SIVAS-MALATYA REGION****METIN ASCI<sup>1</sup>** and **NACI ORBAY<sup>2</sup>**<sup>1</sup> Kocaeli University, Engineering Faculty, Department of Geophysics, Kocaeli, Turkey. E-mail: masci@kou.edu.tr<sup>2</sup> Istanbul Universitesi, Muh.Fak., Jeofizik Muh.Bol., Istanbul, Turkey

Complex geotectonic structure of Sivas-Malatya region (38°30'N-39°30'N;37°30'E-39E) has been studied along with the heat flow regime.

There are three tectonic units on the Eastern Taurides orogenic belt. Paleozoic-Mesozoic aged Keban metamorphics are in the relatively ootcon situation on the first tectonic unit. Second tectonic units consist of Mesozoic Munzur limestones. Third one belongs to the Izmir-Kars suture belt and the ophiolitic unit at the top. Besides, Dumluca-Divrigi and Ilic granitoids which originated in two steps are the products of first step magmatism. Second step magmatism is the large-scale andesitic-basaltic Yamadag volcanism in the upper Miocene-Pliocene.

Aeromagnetic maps have been used to evaluate the heat flow values of the region. A filter which cutoff wavenumber is 0.1 has been applied to the data in order to remove the effects of shallow structures. We have modeled the geological structures as prismatic bodies that caused local aeromagnetic anomalies. 2-D Marquardt inversion technique has been used to obtain the model parameters. Curie depth and Curie temperature maps have been obtained using geothermal gradient by model both depths.

Thus, it has been interpreted that granitoid composition plutons are large batholits going down to depths more than 10 km and still conserving their temperatures. It is also concluded that there is not any magma chamber related to younger Yamadag volcanism. Besides, Kemaliye and Arapkir regions which are on the intersection of Malatya and Ovacik left-lateral fault also have high heat flow values.