



## **Determination of the Possible Source Area of Cappadocian Ignimbrites by Using Anisotropy of Magnetic Susceptibility (AMS) Method**

Gokhan Atici (1), Orkun Ersoy (2), Erdal Sen (2), and Erkan Aydar (2)

(1) General Directorate of MTA, Dumlupınar Bulvarı No:139 06800 Çankaya/ANKARA, (2) Hacettepe, Engineering Faculty, Geological Engineering, Ankara, Turkey

Cappadocian Ignimbrites, emplaced during Upper Miocene and cover approximately 40.000km<sup>2</sup> area at central Anatolia (Le Pennec et al., 1994). Cappadocia hosts at least 9 Mio-pliocene aged ignimbrites. Although there is a debate on the stratigraphy of those ignimbrites, we uses terminology of Le Pennec et al., 1994 which is basing on Pasquaré 1968 proposition with some differences. So we use Cappadocian Ignimbrite terminology as Kavak, Zelve, Sarımadentepe, Cemilköy, Tahar, Gördeles, Sofular and Kızılıkaya ignimbrites. Although, several works have been performed on these ignimbrites, the source areas are poorly known. In Le Pennec et al., 1994; it is proposed that the source vents of Kavak and Zelve ignimbrites might be Cardak village which is located in the South of Nevşehir. One of the important method used in the determination of paleoflow direction of ignimbrites is anisotropy of magnetic susceptibility (AMS). In the literature AMS method had been previously performed on Kizilkaya ignimbrite (Le Pennec et al,1998). In our study; oriented samples are taken from 8 ignimbrites, outcropping in the region, in order to determine the paleoflow directions. Totally; the samples from 70 different sites (dominantly Kavak and Zelve ignimbrites) have been taken. In the determination of the directions of the samples, magnetic and sun compasses are used in the field. Totally, 400 oriented core samples were prepared for magnetic measurement. Kavak and Zelve ignimbrites are unwelded and the oldest ignimbrites in the region. Because of their soft, unconsolidated state, it was difficult to take oriented samples from those ignimbrites at the site. For this purpose; special corers for our portable core logger were manufactured. So, unconsolidated, unwelded and brittle materials were sampled in situ. Preliminary data obtained at the end of our studies illuminate the possible source area of the ignimbrites, especially of Kavak and Zelve ignimbrites.