

# LATE QUATERNARY GLACIATION OF THE ERCIYES VOLCANO, CENTRAL TURKEY

[SARIKAYA, M. AKIF](#)<sup>1</sup>, ÇINER, Attila<sup>1</sup>, ZREDA, Marek<sup>2</sup>, (1) Dept. of Geological Engineering, Univ of Hacettepe, Beytepe-06532, Ankara, Turkey, aciner@hun.edu.tr, (2) Hydrology and Water Resources, Univ of Arizona, Tucson, AZ 85721

Mount Erciyes (3917 m), highest stratovolcano of Central Turkey, is located in the northeastern part of the Cappadocian Volcanic Province. It is characterized by four valleys and one ridge that contain a small glacier and Late Quaternary glacial deposits on its flanks.

1. Aksu Valley is a northwest trending U-shaped valley with a cirque glacier nearly 400 m long. Lateral and terminal moraines together with young ablation moraines and sandur plains indicate three glacial epochs. The oldest and most extensive one is characterized by two well preserved 100 m high lateral moraines at altitudes 2800-2200 m. The next glacial epoch is represented by few lateral moraines and a vast sandur plain containing large andesitic blocks up to 4 m in diameter. The ablation moraines at 3300 m belong to the youngest glacial epoch and are in direct contact with the dead ice detached from the modern glacier.
2. Öksüzdere Valley is a northeast trending narrow glacial valley containing two lateral moraines between 2900-2300 m of altitude. Between these moraines, a younger hummocky moraine complex and a sandur plain is present.
3. Üçker Valley, situated on the east side of the mountain, is a wide cirque area originated from a volcanic amphitheatre. It contains a vast terminal moraine complex covering the present ski area. On the southern rim of the mountain several rock glaciers are also observed.
4. Kirkpınar Valley, situated to the west of Aksu Valley, is covered by a northwest oriented small terminal moraine complex between 2950 and 2750 m of altitude.
5. There are no glacial valleys on the southern side of the volcano. However, on the Topaktas Ridge a few small lateral and terminal moraines are present at altitudes between 3300 and 2500 m. The data available on the modern glacier indicate that the recent glacier retreat probably started at the beginning of the 20<sup>th</sup> century, becoming faster since the 1930s. Cosmogenic <sup>36</sup>Cl dating, based on in-situ accumulation of <sup>36</sup>Cl in boulders exposed to cosmic radiation, will be carried out on boulders collected from moraines in order to determine the age of the landforms and to better understand the magnitude and timing of Quaternary glaciations on the Erciyes volcano.

## Citation:

Sarikaya, Akif M., Attila Çiner, and Marek Zreda, 2003, Late Quaternary glaciation of the Erciyes volcano, central Turkey, XVI INQUA Congress, Reno, Nevada, 23-30 July 2003, Abstracts with Programs, Abstract 40-4, p. 144.