



## **Extensive Quaternary glaciations in eastern Turkey**

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During cold periods in the Quaternary, global ice volume increased and as a result valley glaciers advanced and the vice versa occurred during the warm periods. Quaternary glacier fluctuations had been also recorded in the Turkish mountains. Recently, the chronology of Late Quaternary advances in the northern and western Turkish mountains was reconstructed by surface exposure dating. However, these advances in the eastern Turkey are not dated yet. In this study, we investigated paleoglaciations in Kavuşşahap Mountains, which is located to the south of Lake Van in eastern Turkey. These mountains are one of the extensively glaciated areas in Turkey. Glacial activity is evidenced by more than 20 U-shaped valleys. For instance, one of the prominent and well-preserved glacial landscapes of Turkey is situated in the Narlıca valley system. Lateral and terminal moraines in the valley system indicate more than 10 glacial advances. To build their chronology, 39 erratic carbonaceous boulders were sampled for surface exposure dating with cosmogenic  $^{36}\text{Cl}$ . We also reconstructed the ice margin reconstruction of the Narlıca paleoglacier using the accumulation area ratio and area-altitude balance ratio approaches. We estimated an equilibrium line altitude (ELA) of ca. 2900 m above sea level based on the maximum ice extend, which implied ca. 800 m decrease in the ELA during the Late Quaternary in comparison to the lower bound of the modern ELA estimate. The first results of the surface exposure dating will be presented.