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Cosmogenic 36Cl Geochronology of Late Quaternary Glaciers on the Bolkar Mountains, South Central Turkey

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Quaternary mountain glaciers in Turkey have gained a considerable attention in recent years, particularly in terms of dating glacial sediments by cosmogenic nuclides. The chronology of glaciations obtained from cosmogenic ^{36}Cl or ^{10}Be provided valuable information on timing and extent of the past glaciers on several Turkish mountains. The ages of glaciations were found to be restricted in the Late Quaternary, more specifically to the Last Glacial Maximum (LGM, about 21 ka ago, ka: thousands years). Here, a new glacial chronology is presented from the Bolkar Mountains (37.39^{o}N, 34.61^{o}E, 3524 m), in the central Taurus Range, on southern Turkey. Twenty-seven samples were collected from three glaciated valleys; two are from the north and one from the southern side of the mountain. The geomorphological investigations indicate that the paleoglaciers deposited their moraines from 2000 m to 3200 m above sea level on both north and south facing valleys with a dense glacial network. Cosmogenic exposure ages range between 48.7$\pm$3.2 ka and 3.5$\pm$0.3 ka, suggesting that the most extensive glaciations started to retreat well before the global-LGM. A major glaciation occurred on the onset of the LGM at about 27 ka ago. Later, glaciers retreated and became stationery at around 15 ka, 8 ka, and finally at 4 ka ago. These results are in good agreement with the glacial chronologies from other Turkish mountains and from elsewhere in the Mediterranean region.