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Thermal history, exhumation, uplift, and long-term landscape evolution of the Eastern Great Caucasus, Azerbaijan

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The Caucasus orogen is the highest mountain range between Asia and Europe, whose growth takes place since the beginning of the Cenozoic (Mosar et al. 2010). The orogeny has evolved as a result of the active north directed convergence of the Arabian plate (Nikishin et al. 2001). The Great Caucasus (GC) represents a doubly verging fold-and-thrust belt, with a per-and a retro wedge actively propagating into the foreland sedimentary basins to the south and to the north (Sholpo 1993).
Fission-track dating on apatites was used to reconstruct the thermal evolution of the earth crust and the surface uplift of the Eastern GC.
Samples were taken along different transects in the Eastern GC in Azerbaijan. Most samples of the Eastern GC are sandstones of Lower Jurassic age (deep marine and slope facies). Several sedimentary rock samples of Cretaceous, Pliocene and Quaternary age were taken from the outcrops in the Kura basin and along rivers in the Eastern GC.
The AFT data in the Eastern Great Caucasus was investigated. Most of the dated sedimentary samples revealed several populations of apatite minerals. Most of the AFT ages of the Middle Jurassic samples were reset. The AFT ages of the Lower Jurassic samples from the north of the Great Caucasus vary from 97.5 $\pm$ 13.1 to 154.1 $\pm$ 25.4 Ma. The Lower Jurassic samples in the central area show younger AFT ages between 18.2 $\pm$ 3.1 and 48.9 $\pm$ 7.0 Ma. Most of the Cretaceous samples near Kura basin reveal AFT ages between 47.1 $\pm$ 5.2 and 139.5 $\pm$ 12.6 Ma. The AFT ages of the Pliocene and Quaternary sedimentary rocks reveal different age populations.
The data confirm orogeny in the Eastern Great Caucasus since the Oligocene and propagation of orogeny since middle the Miocene (Mosar et al. 2010).