



Mountain building in the Greater Caucasus: Topography and Uplift/exhumation

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The overall tectonic setting of the Greater Caucasus corresponds to a doubly verging mountain-belt with two external fold-and-thrust belts. The generally admitted model is that the Greater Caucasus mountain range started building in Tertiary. However, the main event, giving rise to the present topography started in Miocene, with a climax in Plio-Pleistocene times and lasts into the Present. The continued convergence (since Tertiary) makes the Greater Caucasus a unique mountain belt where tectonic activity is expressed in numerous morphological structures, such as antedecedent and diverted rivers, terraces up to 2500m a.s.l., uplifted marine sediments to name but a few. Active and relic mountain fronts shape the topography along the southern and northern edges of the mountains. Large uncertainties remain as to exact timing of the orogenic evolution and the associated uplift/exhumation rates. Results from existing GPS studies indicate an average deformation of 14mm/y across the eastern part of the mountain range and older investigations suggest up to 12mm/y vertical uplift. We will review and discuss existing data and also present new results on uplift obtained from a pilot study in the eastern parts of the Greater Caucasus in Azerbaijan. Sampling for apatite fission track dating was done along a 3000m vertical profile and will be compared with results from Pleistocene conglomerates.