

Vertical movements of the Central Anti-Atlas (Morocco): Insights from apatite and zircon fission-track dating

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In order to constrain the post-Variscan uplift of the Central Anti-Atlas, we collected 8 samples from the Precambrian basement of the Bou Azzer-El Graara inlier for apatite (AFT) and zircon (ZFT) fission track thermochronological analysis. The AFT ages obtained range from 171 Ma to 133 Ma. The ZFT ages cluster between 340 ± 20 and 306 ± 20 Ma. ZFT results reflect the thermal effect of the Variscan orogeny. Apatite track length modelling on samples from both the Central and Western Anti-Atlas inliers yield evidence that, i) the Precambrian basement was not entirely exhumed there by the end of the Variscan orogeny; ii) these Anti-Atlas areas were submitted to erosion during the Triassic (?) and Jurassic-Early Cretaceous interval, then weakly buried during the Late Cretaceous-Eocene; iii) final exhumation of the Anti-Atlas took place during the Neogene, contemporaneously with that of the High Atlas. Our results compare favourably with those already published for the Western Anti-Atlas inliers (Kerdous and Ifni).

Keywords: Thermochronology, fission track, apatite, zircon, Anti Atlas, Morocco.