



Post-rift unroofing of the NW Africa passive continental margin during the Central Atlantic opening

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Many passive margins considered as being stable for long times, show however late uplift and exhumation at regional scale as assessed by low temperature geochronometry.

A large amount of Lower Cretaceous terrigenous sediments laid down in most of basins along the NW Africa continental margins indicate that a major episode of erosion occurred during early post-rift period in the Central Atlantic.

AFT and (U-Th)/He dating performed, along a roughly >500 km N-S transect, on pre-Mesozoic basement rocks from Western Meseta to the Anti-Atlas (Morocco, NW Africa) document a fully unexpected widespread unroofing during the Middle-Late Jurassic to early Late Cretaceous, with AFT and (U-Th)/He ages ranging respectively between 120-170Ma and 115-165Ma. A well documented age cluster of 140 ± 20 Ma measured for the Moroccan Meseta, Atlas domains and Anti-Atlas belt designates those domains as potentially being the source areas of the detritic sediments considering the proximity of the depositional basins.

Absence of major fault separating the Anti-Atlas from the rest of the Western African Craton during the Mesozoic suggests the unroofing region to extend further in Morocco, as far south as the Reguibat (Mauritania) or even New Guinea, documented by our investigation, and perhaps even further when confirmed by additional AFT and AHe data.