

Sedimentological and geochemical evidence to detect arid periods recorded in wadi deposits: a case study from northern Morocco

Meriam Elouahabi, Melanie Bartz, Gilles Rixhon, Helmut Brückner

Human occupation is attested in the Ifri n'Ammar cave (Northern Morocco) since ca. 170 ka. The prehistoric site of Ifri n'Ammar, a rock shelter dated back to Middle and Late Palaeolithic times, is characterised by periodic settling. Fluvial systems provide direct information for the reconstruction of palaeoenvironmental changes and human impact. The study focuses on the sedimentary record of the wadi Selloum deposits. Our objective is to highlight the phases of morphodynamic activity vs. stability, especially detect the arid periods, and to link these with the settlement history. Three wadi profiles near Ifri n'Ammar were studied in detail. Sediments were collected at 1 cm interval of a 5 m high wadi wall, and studied in a multi-proxy approach: magnetic susceptibility, grain size, organic matter, inorganic carbon, LOI, bulk mineralogy (XRD), clay mineralogy, XRF geochemistry, and carbon geochemistry. The profile chronology was determined by OSL and TL age estimates. The record shows intense phases of aridification attested, among others, by the formation of calcrete layers.