



Alluvial deposits evolution in the Inaouene river valley (Morocco) during late Pleistocene and Holocene epoch.

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The Inaouène wadi is a river located in the northern region of Morocco. Its catchment area covers about 5124 km² with an average altitude of 800 m. The tributaries drain the marly reliefs of the Prerif in the northern side, as well as its southern ones are crossing the liasic carbonate and the Paleozoic crystalline rocks of the last Middle Atlas foothills. This region is characterised by a semi-arid Mediterranean climate influenced by the ocean oscillations, the average annual rainfall records 600 mm with a very significant spatial and interannual irregularity.

Along the major part of its flow, the Inaouène river has cut its bed between the Prerif and the Middle Atlas belts, by following the foreland corridor that separates them. From a pass (Touaher) that marks the corridor closing, the river valley widens from East to West, forming an alluvial plain with a maximum width of 5 km incised by a meandering and highly sinuous stream.

Alluvial deposits in this valley are more developed on the Atlas side than at the Prerif foot; At least five levels representing the vestiges of the Lower and Middle Pleistocene terraces are present in the landscape.

More recent deposits occupy the valley floor, they constitute a more homogeneous surface showing low terraces abrupts and lateral limits between different sedimentary units. These alluvial deposits correspond to the terminal Pleistocene, middle and upper Holocene epoch. About 30 samples of charcoal and TOC have been selected and analysed using the AMS 14C dating. Due to the scarcity of organic matter, some of the samples contained less than 0.1 mg of carbon and had to be analysed using the gas ion source (GIS) interface of the MICADAS (Haghypour et al., 2019; Wacker et al., 2013). 12 sections were described in the field and of which 8 sections were analysed regarding grain size, mineralogical composition, carbonate content as well as organic matter in soils and sediments.

The analysis results indicate that the late Pleistocene is characterised by a high fluvial activity reflected by the development of braided system river and so coarse material, while fine deposits of floodplains are more abundant during the Holocene.

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