



Perspective

## About the dating of Upper-Pleistocene fluvial deposits in the arid zone of Morocco: comparative data of radiocarbon, optic stimulation luminescence and uranium/thorium methods

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In South Morocco Quaternary studies, one of the major tasks is to date the so-called ‘Soltanian’ alluvial terrace, which occurs widely and lies for its most part beyond the  $^{14}\text{C}$  limit [4]. This terrace was well identified in the Atlantic Atlas [7], in the Souss Basin [1,2,9], on the northern border of the Anti-Atlas [8], and more recently at its southern border [6,10] and also at its eastern side [3]. However, dates were limited at ca 35 kyr, often at the upper or at the middle part of the deposits, lack of adequate dating methods; a subsequent important question was the disagreement between the dating results and the presence of a Prehistoric industry of Mousterian tools throughout the sediments [8,11].

A first response is given by Thorp et al. [6] with recourse at the OSL dating method applied to alluvial quartz grains, which give an age of  $45.0 \pm 3.7$  kyr for the bottom silts of the Soltanian terrace of Agadir Tissint and by Weisrock et al. [10]: OSL age of  $49.1 \pm 4.3$  kyr for silts in a comparable stratigraphic section, and U/Th age of  $55.9 \pm 9.3$ – $8.6$  kyr for an underneath travertine. New dating results, by OSL and U/Th, of the basal units underneath the bottom silts (calcreted alluvial conglomerates at Agadir Tissint, other silts and travertine sequences at Oued Noun) will be soon available [5,6]. Another important challenge in the Atlantic coastal area is to make reliable the bottom of the Soltanian terrace and the base level of the high

marine terrace of OIS stage 5e. These new results will allowed us to make significant progress into three main topics: isotopic dating methods of new material such as alluvial series, calcretes and travertines; knowledge of the duration of alluviation and erosion phases in the fluvial systems of arid countries of Southern Morocco since 120 kyr; correlation between the North Atlantic Upper Pleistocene palaeoclimatic well-known events and the corresponding climate changes related to the fluvial processes on the northern Sahara border during the same time.

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