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Geoarchaeology of Ancient Karnak's harbour (Upper Egypt) : preliminary results derived from sedimentological analyses

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This paper aims to detail the first results of a geomorphological study, led in the western part of the Karnak Temple, Upper Egypt. The geoarchaeological approach privileged here helps to better understand the Nile River dynamics in the neighbourhood of the ancient harbour and of the jetty identified by archaeologists. Based on the study of six stratigraphical profiles, realized by the Egyptian Supreme Council of Antiquities and sixteen manual auger boreholes (up to a maximum depth of 3.50m) drilled in November 2008, the results clearly indicate the continuous presence of Nile River westward of the first Pylon. The boreholes were drilled westward and eastward of the ancient fluvial harbour. Fluvial dynamics characterized by flood events, sandy accretions and large Nile silts depositions are presented and discussed here for later palaeoenvironmental reconstruction. The accurate levelling of the different profiles and boreholes, with the help a topographic survey, allow us to get long sedimentological sequences and to correlate the different sedimentary units. Perspectives of research are introduced with the possibility to realize sedimentological analyses which include the grain-size distribution (sieving method employed) and a magnetic susceptibility study of the different sediments described. Finally, in order to obtain chronostratigraphic sequences, it is also proposed to perform radiocarbon dating on charcoal samples.