



Fluvial geoarchaeology in Avaris, the Hyksos capital in the Eastern Nile Delta (2nd Mill. B.C.)

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Tell el-Dab'a, the ancient city of Avaris, is a key site for understanding the complex alluvial environment of the Nile delta in northern Egypt which is characterized by a palaeo-network of anastomosing branches. Avaris, the capital of the Hyksos kings, is located on the Pelusiac palaeo-branch, near the eastern margin of the delta. Avaris was an important harbour town from the late 12th Dynasty until the end of the Hyksos Period and then again in the Ramesside Period. For the first time, OSL, radiocarbon and archaeological datings have been combined on the fluvial archives. This database helps us to understand better the chrono-stratigraphy and the evolution of the palaeo-environments. Sedimentary analyses have been conducted on (i) the stratigraphy on the main harbour basin revealed by an excavation in spring 2013 (ii) the sediments that gradually silted in the pelusiac branch: coarse bedload at the bottom and sands to fine silts above. A complete bankfull cross section of the Pelusiac branch has been obtained. Thus, we get 3 important characteristics of the main branch: (1) the width, (2) the depth (3) and the palaeo-discharge has been computed. In order to get an idea of the palaeo-processes, C/M diagrams have been done thanks to the micro-granulometric data. By combining these results, a 5 millennium diachronic cartography of the evolution of the Pelusiac palaeo-branch near Avaris has been produced, providing new insights into the natural landscape evolution that may have accelerated the demise of the great city.