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Lithostratigraphic and geochemical study of coastal deposits in Belgium. Implications for the age of the deposits and for comparative bivalve-speleothem environmental reconstruction.

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Two sediment cores from the Western Belgian coastal plain are studied in the frame of the BiSpEem project, which aims at Pleistocene environmental reconstruction through comparison of bivalves from the coast and independently dated speleothems (chemical cave deposits).

Pleistocene sediments from Leeuwenhof and Zoutenaaie contain numerous respectively Cerastoderma and Corbicula shells. First results of AAR dating on these shells suggest a MIS5d or older age for Leeuwenhof sediments and a MIS7 or 9 age for Zoutenaaie sediments. However, significant uncertainties on the AAR datings, as well as possible discrepancies between the species identification and stratigraphic (MIS 5e or older) and AAR (MIS 7 or 9) results from Zoutenaaie require further investigation.

Raman spectrometric and stable oxygen and carbon isotopic measurements on the shells indicate only minor or no diagenetic changes, a positive argument to attempt U/Th dating on the shells and to investigate the possibility to correlate δ^{18}O of the shells with δ^{18}O of inland speleothems.

More info on the BiSpEem project: www.naturalsciences.be/geology/research/environment/bispeem