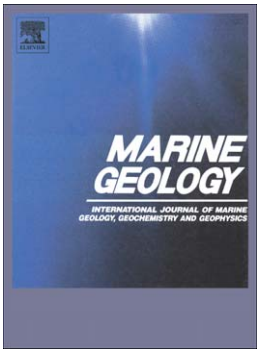

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Control factors of Holocene sedimentary infilling in a semi-closed tidal estuarine-like system: the bay of Brest (France)

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Abstract

This study details the sedimentary infilling of an original tidal-dominated estuary system during the final stage of the last marine transgression. The Bay of Brest is confined and connects the rivers Elorn and Aulne, to the sea of Iroise by a narrow strait encasing a well preserved paleo-channel. The compilation of high- and very-high-resolution bathymetric and seismic data, constrained by sediments datations, allows us to classify the paleo-morphology of the bay into three stepped domains: the paleo-valley floor surrounded by fluvial terraces, the central plateau, and the shallow embayments. Taking into account the main factors controlling the infilling, including sea-level rise, substratum morphology, and hydrodynamics, the stratigraphic scheme of the bay has been reconstructed. The lowstand system track (LST) is assumed to correspond to relict Pleistocene continental deposits associated with the last low sea level around 21000 cal yr B.P. The transgressive phase, represented by the transgressive system track (TST), is divided into two parts. The lower part (TST1) constitutes the first stage of transgressive deposition in the bay.