



High-resolution seismic stratigraphy of Holocene transgressive deposits in the southern continental shelf, Korea

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Holocene transgressive deposits in the southern continental shelf were investigated using high-resolution seismic profiles associated with core sediments. The results show that the shelf deposits consist of five seismic units deposited during Holocene transgression between about 15 and 6 ka BP: ancient beach/shoreface complex (unit P1), estuarine deposits (unit P2), mid-shelf sand sheet (unit M1), sand ridge system (unit M2), and inner-shelf sand sheet (unit M3). They are paralic and marine separated by a ravinement surface. The lower paralic component below the ravinement surface consists of two sedimentary units (P1 and P2) preserved from shoreface erosion. The top surface of the paralic unit is truncated by a sharp erosional surface. This surface is overlain by three sedimentary units (M1, M2, and M3), which were produced by shoreface erosion that shifted landward during transgression. Based on geometries and distribution patterns, the transgressive deposits in this area can be divided into three types. Type I overlying the lowstand systems tract is confined to the shelf margin, and consists of a thick paralic unit P1 and a relatively thin marine unit M1. Type II on the mid shelf has no paralic component and the marine units M1 or M2 directly overlies the sequence boundary. Type III, found in the inner shelf, includes a thick paralic (unit P2) and a thin marine (unit M3) component. It is completely covered by the highstand systems tract.

Keywords: Late Quaternary; Transgressive deposit; Holocene sea-level rise; Korea Strait shelf