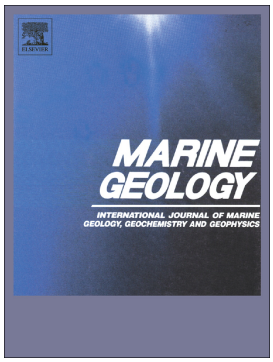

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Glacial retreat patterns and processes determined from integrated sedimentology and geomorphology records

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Abstract

Although hundreds of cores have been collected on the Antarctic continental shelf over the past five decades, definitive interpretations of depositional environments associated with marine-based ice advance and retreat are hindered by similarities in sediment facies and a lack of geomorphic context. The recent use of an advanced multibeam bathymetry system allows for more detailed ice sheet reconstructions from glacial landforms that were previously not resolved with older generation systems. Here we present results from a recent cruise to the Ross Sea, Antarctica that focuses on integrating sediment facies analyses into a geomorphic framework to confidently determine depositional environments and sedimentological processes since the Last Glacial Maximum. Grain-size analysis, geotechnical properties, and