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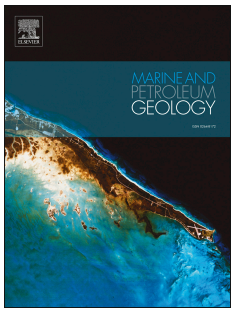

Autogenic controls on hybrid bed distribution in submarine lobe complexes

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Autogenic controls on hybrid bed distribution in submarine lobe complexes

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Abstract

Hybrid beds, the deposits of sediment gravity flows that show evidence for more than one flow regime (turbulent, transitional and/or laminar), have been recognized as important components of submarine lobe deposits. A wide range of hybrid bed types have been documented, however, quantitative analysis of the stratigraphic and geographic distribution of these enigmatic bed types is rare. Here, extensive exposures integrated with research borehole data from Unit A of the Laingsburg Formation and Fan 4 of the Skoorsteenberg Formation, Ecca Group, South Africa, provide the opportunity to examine geographical and stratigraphic patterns over a range of hierarchical scales.

For this purpose, >23,000 individual beds have been evaluated for deposit type and bed thickness. On average, hybrid beds make up < 5% of all events and < 10% of the cumulative thickness. Lobe complex 1 (LC1) of Fan 4 ,Skoorsteenberg Formation, preserves a prominent geographical trend of hybrid beds becoming more prevalent towards the frontal fringes of a lobe complex (up to 33.2% of beds), whereas their proportion in proximal and medial lobe complex settings is < 10%.