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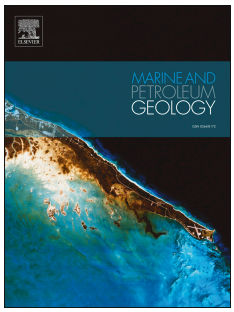


Gas hydrate reservoirs and gas migration mechanisms in the Terrebonne Basin, Gulf of Mexico

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**Title:** Gas hydrate reservoirs and gas migration mechanisms in the Terrebonne Basin, Gulf of Mexico

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## Abstract

The interactions of microbial methane generation in fine-grained clay-rich sediments, methane migration, and gas hydrate accumulation in coarse-grained, sand-rich sediments are not yet fully understood. The Terrebonne Basin in the northern Gulf of Mexico provides an ideal setting to investigate the migration of methane resulting in the formation of hydrate in thin sand units interbedded with fractured muds.

Using 3D seismic and well log data, we have identified several previously unidentified hydrate bearing units in the Terrebonne Basin. Two units are >100 m- thick fine-grained clay-rich units where gas hydrate occurs in near-vertical fractures. In some locations, these fine-grained units lack fracture features, and they contain 1-4-m thick hydrate bearing-sands. In