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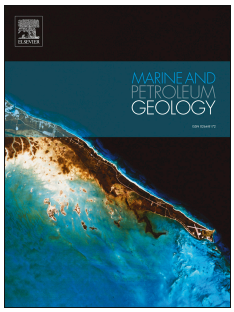

Structure of the Northern Bay of Bengal offshore Bangladesh: Evidences from new multi-channel seismic data

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Structure of the Northern Bay of Bengal offshore Bangladesh:

Evidences from new multi-channel seismic data

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Abstract

New multi-channel seismic data were acquired in the northern part of the Bay of Bengal and at the northernmost termination of the 90°E Indian Ridge offshore Bangladesh. This survey was coupled with a seismic refraction experiment indicating this offshore basin is here floored by a thinned (15-km thick) continental crust, injected by Mesozoic volcanism. This attenuated continental crust is interpreted as formed during Gondwana super-continent fragmentation during a syn-rift period. The dominant tectonic pattern is marked by NE-SW trending tilted blocks filled by syn-rift sediments clearly identified on seismic profiles. The uppermost part of this continental crust (3 to 4 km thick) shows a complex assemblage of dipping reflectors and west-facing tilted blocks injected by volcanic build-ups. The lower crustal sequence (11 to 12 km thick) does not reveal significant reflectors. This syn-rift fabric is attributed to the Mesozoic up to the Early Cretaceous by correlation with published seismic data along the eastern coast of India. Opposite normal faults vergency on the Indian and Burma sides indicate an asymmetrical rifting (simple shear) creating a wide COT on the Burma side and a short COT on the opposite Indian side, a geometry typical of continental crust stretching.