



Abstract Details

[AOGS 1st Annual Meeting](#) > [Ocean and Atmospheres](#) > **Seismic velocity structure at the gas hydrate reflector- Western Continental Margin of India >**

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Title: Seismic velocity structure at the gas hydrate reflector- Western Continental Margin of India

Abstract:

Multi-channel seismic (MCS) reflection data from the Western Continental Margin of India (WCMI) have been analyzed for gas hydrate formation. This paper describes the experimental processing of MCS lines of WCMI, in which we attempted to learn more about the transition to and from a phase in which gas is trapped in the form of methane hydrate. The gas hydrate stability curve in a pressure/temperature regime is typically found in a few hundred meters below a deep-water sea floor. The transition is expressed as a Seismic Bottom Simulating Reflector (BSR), so named because its structure resembles that of the sea floor rather than following the local bedding planes. In seismic reflection associated with bedding planes often cross through BSR. In addition to the BSR, we looked for change in seismic interval velocity, amplitude and AVO effects in the neighborhood of BSR. All of these help us to glean information about the nature of the gas hydrate, its generation and the hydrate/free gas transition. The preliminary results presented here provide important constraints on velocity model that predicts the distribution and formation of hydrate.

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