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Gas Hydrate Studies in Kerala-Konkan Offshore Region of India

Multi-channel seismic data acquired along many traverses in Kerala-Konkan offshore region was reprocessed with the objective of locating probable zones of Bottom Simulating Reflectors (BSR), prime indicators of gas hydrates. However, in the area of present investigation, the bedding planes are horizontal and parallel to the seafloor making the identification of BSRs difficult. The seismic sections show a prominent reflector at sub-bottom depths corresponding to the base of hydrate stability zone. After a careful experimentation, an optimal special processing sequence, using Dip Move Out (DMO), Amplitude Versus Offset analysis (AVO), Horizontal Velocity Analysis (HVA) was carried out over the segments of probable BSRs. It has been observed that in the area under investigation, gas hydrates do exist but their concentration is not sufficient enough to significantly alter the physical properties of host sediments to give detectable indications in seismic records. Full waveform pre-stack inversion attempted at a few locations, indicate the presence of thin hydrate layers.