



**POSTER PRESENTATION**

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**Isotopically Light Methane Accumulations of the Madura Strait: Elements of Thermogenic System Contribution and Implications for Exploration?**

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The light isotopic signatures of the multiple shallow dry gas accumulations of the Madura Strait, Offshore East Java, are commonly associated exclusively with a biogenic origin. This interpretation relies mainly on the fact that those gas accumulations are found at temperature conditions lower than the assumed pasteurization temperature threshold (where methanogenic microbes can theoretically be present) and on the assumption that their compositions and geochemical signatures are globally unique and diagnostic of bacterial degradation. Can this interpretation be challenged?

We have compiled relevant public data of the Madura Strait to capture the regional subsurface setting with respect to processes controlling the activation and preservation of biogenic and thermogenic systems. We considered previous finds and factored in a series of new assessments, including gas characterization, deep source thermogenic activation, pressure regime and gas migration.

We conclude that the shallow gas accumulations of the Madura Strait are most probably made of mixed gas in most cases, and that their light isotopic signatures could equally result from bacterial degradation and/or gas migration mechanisms from a thermogenic source. A thermogenic activation of the proven Ngimbang source would imply the existence of a complex plumbing system to link the source to the shallow accumulations some 5km upward, with the potential for various new plays to be present along the migration pathway.