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## **Revelation of depositional features in the Paleocene and Eocene in the Mannar basin using amplitude analysis of a 3D dataset**

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**Abstract:** The Mannar Basin is located between the western coasts of Sri Lanka and the southern coast of India. The Sri Lankan portion of the basin extends over 45,000 km<sup>2</sup>. It is a deep-water frontier with only two natural gas discoveries. Studies show that the Paleogene and the Late Cretaceous sections have potential hydrocarbon reservoirs. However, little is known regarding their depositional features. The objective of this study was to understand the depositional features in the Paleocene and Eocene sediments in the M2 exploration block in the Mannar basin using a three-dimensional seismic volume. IHS Kingdom software was used for seismic data interpretation. The root mean square amplitude was used to characterise sediment facies in seven time windows having 50-millisecond intervals. The results show the occurrence of an interpreted turbidite fan system in the Paleocene and Eocene sections. A NE-SW trending deep-water canyon channel system occurs in the early Eocene section. [Received: September 11, 2020; Accepted: September 24, 2021]

**Keywords:** Mannar Basin; Sri Lanka; Seismic data; hydrocarbon; Paleocene; Eocene.

**Reference** to this paper should be made as follows: Dushyendra, A., Premarathne, U. and Weerasinghe, D.A. (2022) 'Revelation of depositional features in the Paleocene and Eocene in the Mannar basin using amplitude analysis of a 3D dataset', *Int. J. Oil, Gas and Coal Technology*, Vol. 31, No. 1, pp.38–50.