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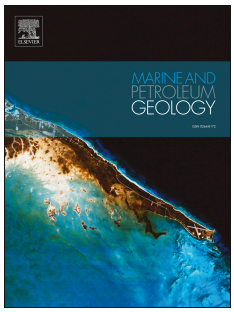

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Formation Pressure Modeling in the Baiyun Sag, Northern South China Sea: Implications for Petroleum Exploration in Deep-water Areas

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ABSTRACT: The Baiyun Sag lies in the deep-water area of the Pearl River Mouth Basin. It is the largest and deepest sag in the northern South China Sea with the highest hydrocarbon potential. The pressure distribution and pressure evolution of the Baiyun Sag have been explained by combining; analysis of measured pressure data, prediction of overpressure using the seismic velocity volume and two-dimensional basin modeling. Today, shallow formations are mainly normally pressured but the deep Enping and Wenchang Formations are over-pressured. Rapid sedimentation and hydrocarbon generation are two mechanisms that lead to compaction disequilibrium and subsequent overpressure generation in the Baiyun Sag, the former effect being considered more important than the latter. The multiple identified episodes of overpressure release through the basin history allows the conclusion to be made