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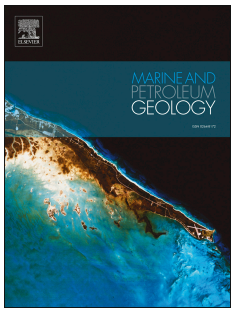

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On the role of incompetent strata in the structural evolution of the Zagros Fold-Thrust Belt, Dezful Embayment, Iran

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Abstract

The Dezful Embayment is the most important fertile oil province of the Zagros Fold-Thrust Belt. It includes several incompetent strata as basal and intermediate décollement levels that play a significant role on the structural styles and hydrocarbon preservation. Based on the interpretation of seismic profiles, the influence of the Gachsaran Formation and the evaporitic Kalhur Member of the Asmari Formation on the geometry of deformation was investigated in different parts of the Dezful Embayment. Obtained results revealed that the thickness of the incompetent strata plays a crucial role in the formation and geometry of different types of fold structures (e.g. rounded, box, chevron, detachment fold) in the Dezful Embayment. There is a sharp difference between the geometry of surface and deep-seated structures due to the existence of thick intermediate décollements (e.g. Gachsaran and Kalhur) in the Dezful Embayment. Therefore, fault geometry and fold styles in upper and lower parts of these décollements are totally