
Structures, Kinematics and Petroleum system of the Algerian Deep Water Offshore

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The Algerian offshore domain represents the main southern part of the occidental Mediterranean deep water sea. It is part of the unexplored algero-provençal basin where more than 10 000Km of spec seismic data have been recently acquired and interpreted to establish the architecture of this basin. Structural interpretation of most prominent seismic markers, referred to the base of Miocene, the base of Messinian salt and the Messinian unconformity associated to seismic stratigraphy and facies geometry studies, led to the subdivision of the stratigraphic units in this domain. The observation of the derived seismic configurations provides improved understanding of both stratigraphic and structural evolution of the Algerian offshore basin. The detailed seismic interpretation and mapping of all types of structures within the associated stratigraphic units were correlated to the gravity, magnetic and geological maps, through a planned interpretation workflow. The derived results have been the establishment of the main mechanisms for the formation of the Algerian offshore sub basins. The proposed structural model, kinematics and the geometry of these sub basins suggest similar architecture with pull Apart basins. The seismic derived stratigraphic chart shows both hypothetical pre-Messinian and Pliocene total petroleum systems with the presence of some direct hydrocarbon seismic indicators (HRDZ, Bright spot, Etc). The deep sea basin located north of Bejaia-Jijel bays (DSB2) is considered as the most prospective basin where its southern bordure is recommended to explore in priority.
