STRUCTURAL GEOMETRY OF THE OFFSHORE INDUS BASIN, PAKISTAN

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The Offshore Indus Basin represents the western part of the trailing edge of the Indian Plate, east of Murray Ridge. This basin is a typical Atlantic Type Passive Margin developed as a result of the break up of Gondwana during the Mesozoic. The structural and depositional history of this margin is genetically related to polyhistory deformation of the Offshore Indus Basin. As a result three distinct structural styles have developed in this basin, which can be recognized on the seismic data.

In the eastern part of the basin, Tertiary Platform has been developed above the Mesozoic sedimentary sequence, which characterise typical tilted fault block geometry of the rift system related to separation of Indian Plate from Africa and Madagascar. The western region of the basin along the Murray Ridge has been involved in the transform motion with the Arabian Plate since Neogene. An en-echelon type folded segment in this part of the basin emerged in the Paleogene strata. The central part of the basin exhibits post-rift downwarping and thick sedimentation after the initial separation of continental fragments. The typical structures in this part of the basin are represented by extensional fault blocks, listric normal faults, and related rollovers. These structural elements reinforce one factor out of source-reservoir-traps trilogy. The appropriate spatial and temporal relationship if established would upgrade the prospectivity of the Offshore Indus Basin.