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Structural Style Variation and Chronology of Foreland Basin Evolution in Central Zagros (East of Izeh Zone and Dezful Embayment-Iran)

One of the most striking observations regarding the structures in Zagros orogenic belt is their variety with respect to their size, structural configuration and tectonic complexity. These differences in structural styles are also encountered in oil and gas exploration wells. Recent studies in the Zagros orogenic belt show close relationship between the structural style and lithological nature of the formations involved in folding. This relationship shall be discussed in this paper from a balanced regional transect, which was drawn across the Zagros folded belt; east of Izeh zone and Dezful embayment. The construction of the main cross section from Binak anticline to Dinar thrust fault has been made possible with updated surface geology studies, geological maps, seismic data interpretation and well information. Structural configuration of deeper objectives conflict with that defined in shallower levels due to the multidécollement nature of folding in the studied area. It is therefore imperative that wells which are drilled for deeper reservoirs (below the intermediate décollement levels which usually imply efficient cap rocks) have been located adequately in order to fulfill the requirements of a successful exploration program. Lower Paleozoic as a basal décollement level all over the area and Triassic evaporites, Albian and Eocene marls and Miocene evaporites as local intermediate décollement levels separate lithotectonic units with different shortening accommodation. The chronology of deformation in this area demonstrate: 1- The presence of N-S and NW-SE trending faults which predate the Neogene Zagros folding. They have influenced sedimentary facies and thickness variations. 2- Intensity of their activity have not been uniform through time. 3- A southwest ward displacement of the foreland basin during the orogeny. 4- Involvement of basement in folding during the Zagros orogeny.