The relatively regularly spaced structures in Zagros fold-thrust belt (ZFTB) in the SW Iran suggest that either the basement beneath the Dezful Embayment as sub-division of ZFTB is relatively featureless or the Hormuz Salt décollement detaches deformation from underlying irregularities. Back-thrusts in the Dezful Embayment initiated in areas with high friction to the foreland directed thrusting. Out-of-sequence thrusts in the study area suggest instability within the composite fold-thrust taper.

The main objective of this presentation is to address some tectonic characteristics of the South West Iran, in addition, to introduce the style of the low amplitude anticlines in the Dezful Embayment using 2D and 3D seismic reflection data. In this respect, possible new structural traps are discussed for future exploration activities.

The present gentle anticlines are detachment folds which formed on deeper décollement. But, the deceiving geometry of tight anticlines led to wrong impression of fault-bend-folding style and sub-thrust closures are not anticipated in this folding system. They initially were formed by detachment folding. Steepening of flanks and thrusting are later occurred by increasing deformation rate. Based on seismic evidences the tight structures would be interpreted as transported detachment folds. Therefore, sub-thrust structures as new prospects are expected in the southern flank of the elongated giant oilfields such as the Aghajari, Ahwaz, Bibihakimeh, Gachsaran, Marun and Pazanan.

In this presentation after a general review of the Zagros fold structures from petroleum habitat point of view, the new concept for interpretation of sub-thrust structure as new exploration prospect will be discussed.