

Comparison of Salt Tectonic Styles in Nova Scotia and Morocco

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A comparison of the present-day extent, the map-view and cross-sectional characteristics of the Late Triassic to Early Jurassic salt basins can be used to provide insights into the hydrocarbon potential of the underexplored deepwater regions of both margins. If there are certain similarities between these margins, then one should expect some structurally analogous, salt-related play types.

The Canadian margin was recently subdivided into several segments based on pronounced, along-strike variations in the salt tectonic styles seen on a regional 2D data set. This interpretation suggests very large-scale allochthoneity (>80 km, locally) of the salt moving basinward from its autochthonous position. The amount of salt driving the deformation is clearly variable along strike. The differences between the "salt-rich" versus the "salt-poor" segments are primarily attributed to the underlying syn-rift basement structure that determined the initial configuration of the salt sub-basins.

The Moroccan salt basin was subdivided in a different style, outlining salt tectonic domains based on the most typical salt-related structural features. The central part of the Moroccan margin, compared to the Canadian margin, was strongly affected by the middle Tertiary inversion of the Atlas system. The impact on salt tectonics of the compressive Atlas event appears to diminish rapidly to the south and to the north of the Essaouira basin.

Some direct structural correlations of the salt basins can be made using a syn-rift reconstruction of these conjugate margins. Interestingly, most of the published plate tectonic reconstructions show a single salt basin during the Late Triassic between Nova Scotia and Morocco. However, it is suggested here that a subaerial volcanic ridge separated the salt basins of Nova Scotia and Morocco during the late syn-rift stage.