

## **Hydrocarbon Exploration and Potential of the Paleozoic Basins North of the High Atlas, Morocco**

**Abdallah Ait Salem<sup>1</sup> and Lahcen Boutib<sup>1</sup>**

<sup>1</sup>Office National des Hydrocarbures et des Mines (ONHYM) Morocco

### **ABSTRACT**

The Paleozoic Petroleum Systems that have been identified in different regions of Morocco are similar to those existing in the hydrocarbon producing countries of North Africa. They consist of Silurian and Frasnian hot shale source rocks, Cambro-Ordovician sandstone and Devonian carbonate reservoir rocks and Upper Devonian to Lower Lias shale and salt sealing rocks. However, the location of the Hercynian fold and thrust belt in central Morocco, which correspond to the inverted Epicratonic basin, resulted in compartmentalization, large discrepancy in the deformation intensity and thermal maturation. Thus, four major hercynian tectonic provinces with different conventional and/or non-conventional hydrocarbon potential can be distinguished. These are the stable and gently deformed platform (Zag, bas Dra, Tafilalet and Bou Denib areas) in the south, the intra arch province (Missour and High Plateaus) in the East, the folded and thrust belt axial zone (Central and eastern Mesetas) in the center and the foreland basin (Coastal Meseta) in the west. Despite the numerous oil and gas shows, the sporadic exploration for Paleozoic objectives of the Moroccan basins prevent a better assessment of their real potential.