

The Main Scenarios for Petroleum Exploration in the Southeastern Part of the Gulf of Mexico

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In the present paper the main scenarios for the petroleum exploration existing in the Southeastern part of the Gulf of Mexico basin are defined. They are located directly to the North of Western Cuba. The scenarios are well differentiated, most of them in a good way.

A large data-base and interpretations concerning the petroleum exploration in Cuba were used: 2D and 3D seismic surveys, industrial Cuban wells in the area and in the surroundings, geochemical researches on source rocks and oils both in Cuba onshore and from the DSDP holes in the Gulf of Mexico. 1D and 2D simulations of hydrocarbon generation, migration and entrapment processes were also included for several sectors using the available seismic lines.

Four main scenarios for petroleum exploration were established:

- The scenario related to the Cuban fold and thrust belt, which is located to the south part of the region.
- The scenario corresponding to the foreland basin, immediately located as a trend to the north of the previous one.
- The scenario which represents the margin of the Mesozoic Florida – Bahamas platform and the talus wedge to the northeastern part of the area.
- The scenario which exhibits the Yucatan Platform and its corresponding slope facies to the southwestern part of the area.

Each scenario is described in terms of the petroleum systems, plays, leads and prospects they contain. Although scenarios have some common characteristics there are differences which allow to consider each of them as separate scenarios.

Some exploration opportunities are discussed mainly referred to the common requirements for exploration in deep waters conditions.
