

Petroleum Systems in Back – Arc Basins: An Example in Southern Cuban Shelf.

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The Southern Cuban Shelf has an area with more than 50 000 km². The oil wells drilled and seismic research carried – out in the last few years for oil exploration have demonstrated that the so – named Cauto Basin is a back arc basin with more than 6 km. of sediments. During the Cretaceous this basin has a relationship with the evolution of the Cretaceous Volcanic Arc “Zaza” that moves in N – NE direction. During the Paleocene begins the Turquino Arc formation towards the south, and caused by its evolution, the Cauto Basin still stays in a back arc position

This paper demonstrates that the evolution of this back arc basin is directly related to the elements of petroleum systems, reservoir, seals, source rocks and timing.

In Albian – Santonian period there were favorable conditions for source rock formation. In Campanian, in this basin continues the deposition of terrigenous rocks with volcanic elements. At the Maestrichtian appropriate conditions for reef reservoir formation had been created.

During Paleocene to Lower Eocene continues the sedimentation of terrigenous rocks with volcanic elements, with predominance of shales.

In Middle Eocene emerged zones due to arc or sediment lifting were formed reaching the possibility for reef development, which constitute reservoirs. In Oligocene the deposition of shaly sediments with seal characteristics took place.

At the end of the Oligocene – beginning of Miocene the Bartlett fault originates. It facilitates the present situation of La Española, with its displacement towards the N – NE from the original position. This wrench fault constitutes a migration path.