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The "Orogenic Float" of Northern South America

A set of three parallel regional seismic transects allow to present the northern margin of Venezuela from Colombia to Trinidad as an "Orogenic Float" developed by the interaction between oceanic crusts and the South-America's passive margin during late Cretaceous to Neogene times from west to east. These two distinct subduction zones play important roles in the geodynamic context: the "B" subduction of the Lesser Antilles (west polarity) and the coeval "B" Colombo-Venezuelan subduction (south polarity).

Additional examples of the structural styles formed in domains are also presented: -The Barbados Accretionary Prism evolves over oceanic crust to the east and progressively rides continental crust towards the south. The prism is currently being disrupted by gravitational tectonics associated with the Orinoco Delta edifice. -The south vergent Mid-Miocene Serrania del Interior shows differential uplift due to remobilization of Miocene shales along its leading edge. -Orogenic collapse of the igneous-metamorphic "Caribbean allochthonous belt" and transpression superimposed to the Neogene sequence are caused by a transfer system between the two "B" subduction zones. -The Falcón anticlinorium resulted from partial inversion of a Neogene flexural basin, as opposed to the prevalent pull-apart model. It is actually overthrust to the north, following the Present-day Colombo-Venezuelan Accretionary Prism. -Comments will be addressed on both the geodynamic setting of wrench tectonic models, e.g. the Boconó and Oca lineaments and "opposing" northwest vergence of the Mérida and Perijá folded belts. Implications for exploration will be discussed for all these structural styles.