

## THE PLATE TECTONIC EVOLUTION OF THE CARIBBEAN PLATE

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Two fundamentally different groups of plate tectonic models exist to explain the Mesozoic and Cenozoic history of the Caribbean, (a) the Pacific models which propose a Late Mesozoic origin of the Caribbean oceanic crust in the Pacific region, and (b) alternative models which suggest formation of the Caribbean crust in a position between the two American plates. We present a model which is mainly based on geometric constraints derived from the present plate configuration, from plate motion vectors of the Caribbean, North and South American plates within a global hotspot reference frame, and from global plate reconstructions. We suggest an inter-American formation of the Caribbean Plate. Paleomagnetic data which cover an age range from Jurassic through Paleocene indicate that ophiolite complexes at the southwestern edge of the Caribbean Plate formed in an equatorial position. They belong to the Proto-Caribbean ocean which opened along an ENE-WSW striking spreading center in the Jurassic to Lower Cretaceous. In Middle Cretaceous to probably Campanian times the Caribbean flood basalt event occurred which thickened and stiffened the Caribbean crust. This flood basalt event is suggested to be related to the mid-Cretaceous superplume event. In the Middle to Late Cretaceous the recently continual westward movement of the American plates started. A lateral displacement of more than 1000 km between the Caribbean plate and the North and South American plates is related to differences in plate motion velocities. The differential motion between the Caribbean and the American plates results from trench-parallel mantle flow as a response to the westward motion of the American plates.