

POSTER SESSION**Campanian/Miocene
tectonostratigraphy,
depocenter evolution,
and basin development of
Colombia and western Venezuela**

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The position of the central axis of deposition over Colombian and Venezuelan continental crust has varied markedly through time. The axis migrated from west to east from Late Cretaceous to Oligocene but, at times, secondary drainage divides were established by local uplift events. In Oligocene time, with initial inversion of the Eastern Cordillera, the central axis of deposition was divided into two main axes, the proto Magdalena and the proto Orinoco systems. The west to east migration of the central axis of deposition had a tectonic origin and occurred in combination with tectonically driven changes in accommodation space.

Depocenter evolution is as follows.

1. The axis of Campanian and early Maastrichtian depocenter was located a few kilometers east of the present position of the Central Cordillera of Colombia. It migrated east with gradual uplift of the Central Cordillera.
2. The central axis of late Maastrichtian deposition was positioned approximately over the present-day western foothills of the Eastern Cordillera, possibly crossing the Eastern Cordillera over the Santander Massif and continuing into Lake Maracaibo. At the time of the Cretaceous/Tertiary boundary, parts of the eastern margin of the Eastern Cordillera were uplifted by an initial phase of inversion of deeply-rooted Jurassic and Early Cretaceous normal faults.
3. In Paleocene time, the central axis of deposition was located along the spine of the Eastern Cordillera and extended into the Maracaibo Basin.
4. In latest Paleocene time, the central axis of deposition shifted to eastern regions of the Eastern Cordillera and accommodation space decreased.

Continued on pg. 18

5. The Early Eocene central axis of deposition was located along the present-day eastern foothills of the Eastern Cordillera; accommodation space continued to decrease and the regional Middle Eocene unconformity began to develop. In Middle Eocene time a regional unconformity developed, marking the climax of the pre-Andean orogeny. Deposition at this time occurred dominantly in the Maracaibo Basin where large amounts of sediment derived from vast exposed areas accumulated.

6. The Late Eocene central axis of deposition was confined to the present position of the Llanos Foothills and reflects a regional increase in accommodation space. In Oligocene time, the initial uplift of the Eastern Cordillera divided the main depocenter into two central axes. Accommodation space diminished in uplifted regions but continued to increase in the depocenters allowing sporadic marine incursions into the present position of the Llanos Foothills. As uplift of the Eastern Cordillera continued, the eastern depocenter axis (proto Orinoco) migrated east and the western depocenter axis (proto Magdalena) migrated west. The process continued through the remainder of the Cenozoic era. Implications of this model for hydrocarbon exploration will be discussed throughout the presentation. □