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TECTONO-STRATIGRAPHIC INTERPRETATION OF THE MONAGAS FORELAND AND THRUST BELT, EASTERN VENEZUELA

The Monagas Foreland and Thrust Belt is the result of a Neogene compression related to the oblique collision between Caribbean and South-American plates. The integration of seismic, well and surface data, within the different ranges of this belt, allowed the documentation of its tectono-stratigraphic evolution. Four major unconformities were defined on the basis of their seismic-stratigraphic response together with biostratigraphic and well-log data. Each of these unconformities date the different tectonic pulses and the emplacement of three thrust systems interpreted in this study. The oldest unconformity is dated Lower Miocene, and is interpreted to represent the first tectonic pulse. The upper section of the Middle Miocene rests in onlap over erosional truncations, providing evidence for the interpretation of the second and major unconformity. This section dip strongly North, showing apparent downlaps on the northern wedge of the basin, and giving the wrong impression of a restricted basin sourced from the South. However, the integration of different data sets in this study suggests a southward opened basin with the majority of sands on its northern wedge, indicating that the apparent downlaps are actually coastal onlaps. The third unconformity represents the emplacement of the last thrust system, the reactivation of the second, and the tilting of the Pirital High, forming the Morichito Basin. Finally, the fourth unconformity, dated within the Pliocene, not only reflects the last reactivations over the belt, but also a major growth phase of the deformation front.