



4-7 November
Indianapolis, Indiana, USA



283-4: A REVISED STRATIGRAPHIC FRAMEWORK FOR THE SOUTHEAST MARGIN OF THE PARANÁ BASIN – EVIDENCE FOR GLACIO-EUSTATIC FORCING ACROSS THE LATEST CARBONIFEROUS THROUGH EARLY PERMIAN

Wednesday, 7 November 2018

02:20 PM - 02:35 PM

📍 *Indiana Convention Center - Room 140*

The late Paleozoic is a period in Earth history characterized by dynamic fluctuations in sea-level, inferred to be driven by Gondwanan glaciation, with the vast majority of evidence constructed from the low-latitude euro-american successions. Here we present evidence for a dynamic base-level history from the latest Carboniferous through early Permian successions along the south and southeast margin of the mid- to high-latitude Paraná Basin, which is interpreted as being glacially influenced during the latest Carboniferous. A minimum of at least three transgressive-regressive sequences are recorded in the Taciba through Palermo formations, which represent a mix of littoral to fluvial environments. Transgressive sequences are typically observed as organic mudstones or glauconite-rich muddy sandstones that overlie nearshore and terrestrial deposits including coals. Regressive events are evidenced by sharp erosional surfaces which stratigraphically juxtapose offshore/marginal marine deposits with nearshore/terrestrial deposits and in some instances may be responsible for bedrock-incised valleys. Low-stand to transgressive systems tracts are composed of marginal marine and terrestrial sediments, which back-filled incised valleys and host paleosols and coals across multiple stratigraphic levels. Detrital zircons recorded from key intervals within this framework show pronounced shifts between strong local input associated with initial regressions and low stands, contrasting varying amounts of far field inputs across the transgressive systems tract. This evidence, coupled with new CA-TIMS age control from correlative Southern Africa glaciogenic sections suggests accommodation and sediment input in the south and southeast regions of the Paraná Basin is tightly coupled to Gondwanan ice in the early Permian and not regional tectonics, though the latter may impact local accumulations.

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