



The Santa Lucia-Aiguá-Merín rifting (Uruguay): an early aborted branch of the South Atlantic break-up

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The Santa Lucía-Aiguá-Merín (SaLAM) rift is emplaced in the cratonic basement of SE Uruguay. It covers 450 km from the Río de La Plata to the southwest to Laguna Merín to the northeast running broadly parallel to the South American plate boundary. It is a narrow, pull apart trough trending N 70° with two distinct depocenters (Santa Lucía and Merín) filled predominantly by Mesozoic volcaniclastic sediments. Alkaline magmatic rocks have been identified in the Minas-Aiguá-Lescano uplifted segment that separates both depocenters. The Santa Lucía depocenter or sub basin was filled with a up to 2,500 m thick column of upper Jurassic to Cenozoic volcaniclastic sediments that rest on the structured Precambrian basement. The Merín sub basin is dominated by a thick volcanic sequence associated with a significant gravity anomaly.

The SaLAM rift joins southwestward into a triple-junction configuration with the NW-SE trending Salado Basin is was buried by Lower Tertiary to Recent sediments.

The SaLAM trough can be interpreted as an aborted branch of the South Atlantic break up; its orientation was probably controlled, at least partially, by the structural grain of the pre-existing Gondwana crystalline basement. Its accessible outcrops provide an excellent opportunity to study the sedimentary, magmatic and tectonic evolution of the early stages of the South Atlantic break up and its potential reactivation during the Andean orogeny that seemed to have affected significant parts of the adjacent large continental platform of Uruguay and Argentina.