

Theme 9. Volcaniclastic deposits**Special Session 9.1. Volcanism and sedimentology**

Poster presentation

Latest Triassic active eolian dune field preserved by CAMP lava flow

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The Central Atlantic Magmatic Province (CAMP) is a Large Igneous Province (LIPs) related to the opening of the Central Atlantic Ocean. One of CAMP's records in South America are the volcanic deposits found in the Parnaíba Basin, Brazil. The interaction of lava flow with active depositional systems allows the reconstruction of the paleoenvironmental and paleoclimatic conditions contemporary to volcanism. In the Parnaíba Basin, the Middle to Upper Triassic interval contains an expressive eolian succession named Sambaíba Formation, which is overlaid by lava the Jurassic Mosquito Formation, a CAMP-related volcanism, settled up at the Triassic–Jurassic boundary (T–J ~201 Ma). The basal portion of this unity records several complex eolian strata composed of successive sets of cross-stratification, frequently showing soft deformation structures. Stoke's surfaces occasionally occur, but subaqueous deposits are rare. The presence of Stoke's surfaces combined with the scarcity of subaqueous facies suggests a water table positioned close to the depositional surface, which is corroborated by the frequent soft deformation structures affecting the aeolian cross strata. The contact between the basal and upper portion of Sambaíba is a regional surface, probably representing a supersurface. The upper portion of the succession is represented by a large set of compound cross-stratification, covered and preserved by lava flow, including the preservation of the wind-rippled topset of the eolian dunes. The paleodune stoss side preserves several features of interaction between unconsolidated sediments and pahoehoe's lava flows. This study is one of the rarest reporting the preservation of both aeolian dune topsets and lava imprint features by lava floods covering an active dune field, preserving the bedforms morphologies. The paleocurrent to NW of the aeolian dunes suggests that trend winds prevailed in the low latitudes of Gondwana at the Triassic–Jurassic boundary, supporting the numerical atmospheric models for the period. Moreover, the data reported in our study provides more evidence about the aridity at low latitudes in western Gondwana for the Triassic period. Finally, the interaction between sediment and lava indicates that the upper portion of Sambaíba Formation can reliably be positioned at the T–J boundary.