

# *SLIC 2010*

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*SIMPOSIO LATINOAMERICANO DE ICNOLOGÍA  
LATIN AMERICAN SYMPOSIUM ON ICHNOLOGY*

*30/10-07/11/2010, SÃO LEOPOLDO, RS, BRASIL*



**Resúmenes / Abstracts**

## The role of microbial mats in the preservation of dinosaur tracks from the Sousa Basin (Lower Cretaceous, Brazil)

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Dinosaurian footprints and tracks in the Sousa Basin occur in at least 37 localities, in distinct stratigraphic positions, and occurring as part of the Borborema Megatracksite. Footprints are rare in the Antenor Navarro (lower) and Rio Piranhas (upper) formations, where lithofacies analyses point to sedimentation in ancient alluvial fan to fluvial braided environments. In the Sousa (middle) Formation, the generally finer grain size of the sediments rendered them more suitable for footprint preservation, where lithofacies analyses point to sedimentation in hot, small/shallow and temporary lakes, swamps and meandering fluvial palaeoenvironments. Microbially induced sedimentary structures are in fact observed in many of the fine-grained lithofacies where dinosaur tracks are also found, and the large number of these tracks in Sousa Basin (particularly in the Sousa Formation, Lower Cretaceous) may be related to the role of the mats in their preservation. Recent observations showed that the footprint morphology is generally related to the microbial mat thickness and water content of the mat and the underlying sediment. In dry mats, generally poorly defined or no footprints were produced, while in soaked ones the imprints are well-defined, sometimes with well-defined displacement rims. The formation of well-defined displacement rims around the prints of large dinosaurs occurs in thick, plastic, moist to water-unsaturated microbial mats on top of moist to water-unsaturated sediment. These aspects are commonly observed in the tracks of the Passagem das Pedras site. The footprint consolidation and its early lithification probably occurred due the existence of microbial mats that allowed a more cohesive substrate, preventing from erosion. The sediments were initially stabilized by early cementation and by the network of mat fabric over the tracks. Successive flooding, and subsequent sediment influx allowed the large number of layers with preserved dinosaur tracks and sedimentary structures.

(This study was supported by CNPq, FAPERJ and PRH-ANP-18).