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# A micromorphological approach for the study of earthen mound construction in southwestern Amazonia

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## Résumé

Here we present the first geoarchaeological study of one of the largest geoglyph sites in the southwest of the Brazilian Amazon: the Sol de Campinas do Acre site (SCA), located near the border with Bolivia. Considered by the National Register of Archaeological Sites as a circular geoglyph, it is currently made of 15 mounds with an average height of 3 meters. The mounds are arranged elliptically around a central plaza covering approximately 15.000 m<sup>2</sup>. Radiocarbon datings showed that SCA was built after most geoglyph sites in the region. Specifically Mound 11, studied in this work, revealed a succession of occupation events between the 11th and 17th centuries.

Geoglyph is a general and popular denomination for the series of archaeological structures identified in the Amazonian southwest. Recently the term is being used for sites made of ditches or embankments, differing from earthen mound type constructions. This is due to the perception that, even when relating spatially, there are substantial differences between earthen mounds and other types of earthworks, such as chronologies, sizes and construction techniques.

Earthen mounds complexes have been widely known in the Amazon since ancient times because of their conspicuousness in the landscape (often interpreted as evidence of monumentality). Despite the quantity, extent, and diversity of forms that earthen mounds can adopt, little is known about their use in the communities responsible for their construction. Recent research in the southwest Amazon conceives earth engineering as a dynamic, enduring cultural practice that transformed the landscape and established regional communication networks. Although widely known, there are still few geoarchaeological studies on the Amazonian earthen mounds seeking to understand the formation processes of the structures from the study of its main component: sediments.

This work presents the preliminary results of the micromorphological study of Mound 11 at SCA. Analyses have indicated a clear intentionality in the choice for construction material. The lower layers of Mound 11 were engineered using the A horizon of the surrounding soil adding allochthonous material, such as nodules of iron oxide and / or manganese, possibly to offer more resistance to the structure. Micromorphology has the potential to reveal hidden aspects in the formation of earthworks and to offer complementary data for the interpretation of site use and function.

**Mots-Clés:** micromorphology, earthen mounds, Amazon

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