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Título do Trabalho: EXPLORING THE POTENTIAL OF LIMESTONE TUFAS FOR QUATERNARY PALEOENVIRONMENTAL STUDIES IN THE SERRA DA BODOQUENA, MATO GROSSO DO SUL.

Forma de apresentação: Pôster

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Resumo do trabalho:

Tufa deposits are freshwater carbonates occurring extensively in the Quaternary period. These continental carbonate deposits develop from surface waters abundant in dissolved calcium carbonate and often contain remnants of macro and micro vegetation, invertebrates, and microbial records. In the Serra da Bodoquena, state of Mato Grosso do Sul, Brazil, the most significant occurrence of tufa deposits in South America is found. In this study, we explore the potential of using tufas for understanding the paleoenvironmental evolution of Quaternary continental carbonates through sedimentological and faciological analysis, as well as δO and δC isotopic analysis, using a tufa deposit in Bonito, Mato Grosso do Sul. The findings unveil three facies associations: firstly, the Banhado Facies, which comprises i. Pulverulent micrite, ii. Oncolites, iii. Walls of the Formoso River. The second association is the Middle Formoso River Facies, including Dam Facies. Lastly, the Mimoso River Facies encompasses the Waterfalls of Mimoso River. Carbon and oxygen isotopic analysis revealed $\delta^{18}\text{OVPDB}$ values ranging from -6.57 to -8.54‰ and $\delta^{13}\text{CVPDB}$ values from -6.46 to -10.36‰. The $\delta^{13}\text{C}$ analysis indicates the influence of organic carbon in the total dissolved carbon composition. Oxygen isotope values aided in identifying meteoric fluid in the depositional system. Comparing oxygen isotope data from tufas with theoretical values calculated for $\delta^{18}\text{OVPDB}$ of precipitated calcite, based on previous rainfall data, confirms the potential of tufas for paleoclimatic studies, notwithstanding the increased complexity and challenges in obtaining geochronological constraints.

Palavras-Chave do trabalho: Continental carbonates; Holocene; Tufas;