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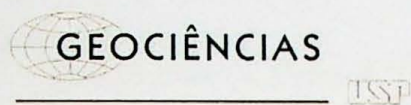
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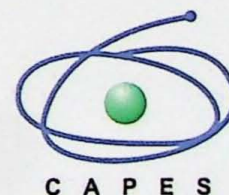
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## Age constraints and sedimentary evolution of the Sete Lagoas Formation, Bambuí Group, at southern São Francisco Craton, Brazil

Gustavo Macedo de Paula-Santos<sup>1\*</sup>, Marly Babinski<sup>1</sup>, Matheus Kuchenbecker<sup>2</sup>, Sergio Caetano-Filho<sup>1</sup>

<sup>1</sup>Centro de Pesquisas Geocronológicas, Instituto de Geociências, Universidade de São Paulo, Brazil.

\* *gustavomps@yahoo.com.br*

<sup>2</sup>CPMTC, Universidade Federal de Minas Gerais, Brazil.

The depositional age and the sedimentary evolution of the Sete Lagoas Formation (SLF) has been one of the most intriguing themes of the Brazilian geology. This unit comprises two shallowing-upward sequences of carbonate rocks with subordinated pelitic intercalations at the base of the Bambuí Group, overlying the glacial deposits of the Jequitaiá Formation in the São Francisco Craton (SFC). This study combines isotope chemostratigraphy (C, O, Sr) and U-Pb dating on detrital zircons retrieved from marls of SLF from five sections located at the southeastern part of the basin. Sections from the basal sequence comprises low organic matter limestones and dolostones with 7-30% of detritic content,  $\delta^{13}\text{C}$  values around 0‰ and deposited on shallow tidal dominated settings. The upper sequence comprises pure limestones, rich in organic matter,  $\delta^{13}\text{C}$  values as high as +10‰ and deposited on moderately deep settings with low tidal/storm influence. The most representative  $^{87}\text{Sr}/^{86}\text{Sr}$  ratios obtained on carbonates from both sequences are around 0,7075. Zircon grains from both sequences yielded ages as young as 540 Ma. Moreover, an expressive zircon population (n=18) of 560 Ma suggests that the sedimentary evolution of SLF started at the Ediacaran/Cambrian limit. The studied marine carbonates were probably deposited on a restrict epeiric sea, after the closure of Adamastor Ocean and the build up of Araçuaí-West Congo Orogen. This scenario would explain why the Sr ratios from SLF carbonates are lower than those expected for contemporaneous oceans. Worldwide correlations by isotope chemostratigraphy are not reliable in such cases.