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U-Pb SHRIMP GEOCHRONOLOGY AND ISOTOPE CHEMOSTRATIGRAPHY (C, O, Sr) OF THE TAMENGO FORMATION, SOUTHERN PARAGUAY BELT, BRAZIL

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ABSTRACT

The Tamengo Formation, representing the upper part of the Corumbá Group, consists of carbonates with the metazoans *Cloudina* and *Corumbella* and recently discovered intercalations of volcanic ash beds. Here we present the U-Pb geochronology on zircons separated from 12 ash beds and C, O and Sr isotope data for the carbonates of this formation.

Zircons recovered from ash beds collected from two quarries revealed two distinct populations: (i) euhedral crystals interpreted as igneous components of the volcanic ash, and (ii) detrital grains. The U-Pb age of 543 Ma determined on the euhedral zircons is interpreted as the age of both volcanism responsible of the ash fall and the deposition of the associated carbonates. U-Pb ages obtained on detrital zircons range from 900 Ma to 1.900 Ma and indicate the age of their source areas.

C, O and Sr data from carbonates collected from three quarries yielded $\delta^{13}C$ values ranging from -3 to +5 ‰; the negative values were obtained at the base of one section and became more positive towards the top. $\delta^{18}O$ values range from -9.6 to -3.4 ‰, and $^{87}Sr/^{86}Sr$ ratios of 0,7084-0,7086 are constant along the sections.

Our geochronological results provide strong evidence that the Tamengo Formation was deposited close to the Precambrian-Cambrian boundary, which is further supported by the abundance of the index-fossil *Cloudina* in this formation. Moreover, the consistency of the high resolution C and Sr isotope data obtained in this study help to better constraint the isotopic curves for Ediacaran seawater which are very useful for global correlations.

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