

Contribution of the Açungui Group Stratigraphy from Carbon and Oxygen Isotope Evidence, Paraná State (Southeastern Brazil)

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As a result of structural control the Açungui Group north of Curitiba has tectonically-stacked geologic units. $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$ were used to determine the original stratigraphy. The Água Clara Formation occurs in lower part of the structural blocks B, C and D, and its sedimentation followed a clastic-chemical-clastic cycle. Identical sequences are seen in the Capirú, Votuverava and Antinha Formations, and also in Units I, II and III of the Itaiacoca Group. Stable isotopic compositions of marbles of the Rio Branco unit (Capirú Formation) and the Saivá unit (Votuverava Formation) are similar and differ from that of the Água Clara Formation. Two distinct grouping in the $\delta^{13}\text{C}$ vs. $\delta^{18}\text{O}$ diagram which probably result from sedimentation under different conditions in separate basins. Using the secular variation of $\delta^{18}\text{O}$, an age of slightly less than 1.3 Ga is inferred for the Água Clara Formation. The deposition in separated basins of the thick marble horizon II represented by the Capirú, Votuverava, Antinha and Itaiacoca Formations of the Açungui Group was practically contemporaneous from about 0.9 Ga for the Saivá unit and of 0.71 Ga for the Rio Branco and Morro Grande units. This inferred history agrees with other recent geological interpretations for the region.