

Carbon and Oxygen Stable Isotope Analyses of Continental Carbonates of the Bauru Basin (LK, Brazil)

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The Bauru Basin is a Late Cretaceous intracontinental basin, located in central-southern part of the South-American Platform. It was filled by a sandy sequence with 300 m (present maximum thickness) and 370,000 km² of area. Some of its units show intense carbonate cementation and calcretes. The present data refers to the eastern part of the basin (west of São Paulo, southwest of Minas Gerais, northwest of Paraná states), situated between the 18°S to 25°S and 47°W to 54°W coordinates. Sedimentation in Bauru Basin occurred under hot semi-arid to desertic conditions.

Carbon and Oxygen stable isotope analyses from carbonates show non-marine values ranging of $\delta^{13}\text{C}$ from -5.5 to -10.5 ‰ PDB and $\delta^{18}\text{O}$ from -3.5 to -7 ‰ PDB. Two groups of values may be distinguished: (1) $\delta^{13}\text{C}$ from -8,8 to -10,3 ‰ and $\delta^{18}\text{O}$ from -5,9 to -6,8 ‰ related to groundwater calcretes (Ponte Alta Mb., Marília Fm.) and 2) $\delta^{13}\text{C}$ from -6,8 to -8,5 ‰ PDB and $\delta^{18}\text{O}$ from -4,1 to -6,3 ‰ PDB related to carbonate crusts and nodular levels of pedogenetic origin (Echaporã Mb., Marília Fm.).

Lighter isotopic composition values of the second data group agrees with petrographic textures and stratigraphic relationships of an edaphic origin to Echaporã Mb. calcretes.