

## INFERRING THE GEOMORPHOLOGICAL DYNAMICS FROM THE STUDY OF PALEOCHANNELS: A CASE STUDY OF CENTRAL BRAZILIAN CERRADO

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The north-eastern portions of the Brazilian Cerrado are rich in karstic landscapes, geologically composed of Neoproterozoic Pelito-Carbonate rocks of *Lagoa do Jacaré* formation of the Bambuí group. The paleochannels in the area have resulted from the drowning of surficial drainage networks into the Karstic features (e.g., sinks) that make underground flow systems in the area. These paleochannels protect the sediments from the period prior to collapse. The present research is carried out for reconstruction paleoenvironmental of the karstic landscapes through studying of fluvial sediments trapped in these paleovalleys. To that end, nine paleovalleys were studied in the area of approximately 176,000 ha, using an integrated approach (e.g., geoprocessing techniques, remote sensing, and fieldworks). The characterization and stratigraphies of the selected profiles were presented in the form of cross-sections. In addition, the soil samples were also taken for geochronological analysis by radiocarbon method. The physical and chemical analyses were also applied. The geochronological analysis of paleochannel deposits at an average thickness of 2.35 meters, showed a range of 400 +/- 30, 2220 +/- 30, 1350 +/- 30 and 11270 +/- 30 cal and BP years of sandy and clayey depositions. The sandy packages consist of gravels with rounded and sub-rounded pebbles of the fluvial environment along with plane-parallel laminations, interspersed with dark sandy layers with the presence of organic matter, which were attributed to periods prior to drainage capture. In spite of the considerable thickness and stratigraphic variations observed on the profiles, the estimated ages correspond to recent periods, which show an active fluvio-karstic system in the area having an estimated sedimentation rate of around 0.26 cm per year. The paleoenvironmental reconstruction makes it possible to obtain the necessary knowledge for the management and protection of these areas of enormous scientific, environmental and cultural values.

**Keywords:** Brazil; karst; paleovalleys; geochronology