

## **KARST GEOMORPHOLOGY AND GEOSPELEOLOGY OF THE UNA RIVER BASIN, EASTERN CHAPADA DIAMANTINA, BAHIA, BRAZIL**

\* PEREIRA, R.G.F.A. & \* KARMANN, I.\* Instituto de Geociências - University of Sao Paulo, São Paulo, Brazil

The Una river basin lies on the eastern border of the Chapada Diamantina range, Central Bahia State. The river has a meandering pattern on a plateau of carbonates of the Neoproterozoic Una Group. The headwaters are on metarenites of the Chapada Diamantina Group, which exhibit a mountaineous relief along the left margin of the river. With a total of around 610 km<sup>2</sup>, the carbonate surface has two compartments, according to the nature of water recharge: the western margin with mixed recharge (alogenic and autogenic) and the eastern margin, only autogenic. Karst surface features and cave systems are more developed on the eastern margin. Morphometric analysis of the karst surface revealed a mean rugosity of 0.998 (1:100,000 scale) and a density of karst depressions of 0.08 depression/km<sup>2</sup> (1:60,000 scale). The main surface features are rock scarpments, interrupted fluvial valleys, collapse and dissolution dolines, sinkholes and surgences. An increase in catastrophic collapses has been observed during the last 50 years which was related to the intense deforestation of the native vegetation. 13 caves were surveyed showing two morphologic patterns: network caves and breakdown halls, with preferential conduit directions along N-S, N30E, N65W and E-W. Speleogenesis is interpreted as a normal syngeneses with important vadose entrenchment. The collapse of network cave systems gives origin to large breakdown halls, as the Poço Encantado cave, with a subterranean lake 110 m in length, 55 m wide and 60 m in depth. Mapping of caves, subsidence features and springs allowed to identify the main groundwater flow routes, which are mainly along the N-S direction.