

SEDIMENTOLOGY OF CLASTIC SEDIMENTS OF THE LAPA DOCE TORRINHA CAVE SYSTEMS (CENTRAL BAHIA, BRAZIL): EVIDENCES FOR SYNGENESIS FOLLOWED BY PARAGENESIS

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Neoproterozoic carbonate rocks of the Salitre Formation (Una Group), form a plateau surrounded by quartzite mountains in the Iraquara region, southern portion of the Irece Basin (central Bahia State). Several kilometric cave systems occur in this area, most of which exhibit a clastic sedimentary infilling, usually reaching the top of large conduits. Facies analysis has been applied to these sediments, along the two longest cave systems of this region (Lapa Doce and Torrinha) in order to understand their sedimentology and stratigraphy, as well as to relate sedimentation with cave development and geomorphological evolution. Thirteen facies have been described, based on textural parameters and internal structures. These facies belong to three groups: breccias, sands and muds. Vertical successions of these facies allowed the distinction of three facies associations, related to suspension, traction, and gravity deposits. Three successive stages of sedimentation are proposed: (i) by subterranean rivers; (ii) by the action of ephemeral streams; and (iii) by the gradual injection of mud flows through flooded conduits. Chronological data indicate that this last stage was active until the end of the Late Pleistocene. The different sedimentary environments are attributed to climatic changes. The first two stages of sedimentation require partially air-filled conduits, corresponding to a syngenetic cave entrenchment. The third stage is compatible with paragenetic hydraulic conditions, leading to an upward expansion of part of the cave conduits.