

SPELEOGENESIS OF THE LAPA DOCE AND TORRINHA CAVE SYSTEM, CHAPADA DIAMANTINA REGION, CENTRAL BAHIA, NORTHEASTERN BRAZIL

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Lapa Doce and Torrinha are representative cave systems of the southern part of the Irecê Basin, with approximately 25 km of planimetric cave development. These caves are in Neoproterozoic limestones of the Una Group. Morphologic analysis of the conduits on planimetric maps and cross-sections, together with sedimentologic studies of the clastic deposits revealed a multiphase evolution of the caves. The systems exhibit a distributary conduit pattern according to scallop paleoflow routes, with an expressive sedimentary infilling along almost all the cave. The following phases are proposed in the speleogenetic model: conduit initiation, conduit enlargement and infilling with clastic sediments, followed by sediment erosion and conduit modification. The initiation started with phreatic conditions. The conduit enlargement was with syngenetic entrenchment, followed by the infilling phase, which clogged almost all conduits up to the roofs rising hydraulic conditions of paragenetic modification of cave passages. The last phase involved partial sediment removal and opening of new passages, forming the present day explored passages.