

28TH INTERNATIONAL KARSTOLOGICAL SCHOOL "CLASSICAL KARST" REGIONAL KARSTOLOGY - LOCAL AND GENERAL ASPECTS

HYDROLOGICAL AND PHYSICAL-CHEMICAL PROCESSES AND THEIR











CONTROLLING EFFECT ON THE KARST LANDSCAPE IN THE PERUAÇU RIVER CANYON, CAVERNAS DO PERUAÇU NATIONAL PARK, MINAS GERAIS, BRAZIL.

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THE RESEARCH AREA AND OBJECTIVE

RESULTS

The karst canyon of the Peruaçu river was developed in carbonate outcrops of the Bambuí Group, presenting a significant set of large dimension caves within the limits of the Cavernas do Peruaçu National Park, located in the north of Minas Gerais, Brazil.

The Cavernas do Peruaçu National Park consists of a large complex of caves and archaeological sites, with approximately 140 caves and 80 archaeological sites, including the well known Lapa do Janelão, Lapa do Brejal, Lapa dos Índios, Arco do André and Lapa dos Desenhos. The hydrological data collected in the region show the complexity of the current water regime of the Peruaçu river.

Although the hydrological data are recent and limited in time, they show an apparent reduction in water flow at some monitoring points, especially a strong downward trend in the river segment.

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One believes that changes in the hydrological dynamics of the region could significantly affect these environments. Therefore, the research seeks to understand how the hydrological variability of the Peruaçu river - associated with physiographic and physicochemical aspects of its hydrographic basin - interacts and shapes the karst landscape in the Park.



The physical-chemical parameters of the Peruaçu River offer favourable conditions for the dissolution of the rock, providing the modelling and formation of new conduits.





dade Federal Fluminense dade Federal dos Vales do Jequitinhonha e Mucuri Federal do Norte de Minas Gerais

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Fig. 1: Research area.



Fig. 2: Aspects of the karst canion at the Cavernas do Peruaçu National Park.

METHODOLOGICAL PROCEDURES

For the analysis of physicochemical parameters such as hydrogen ionic potential, conductivity, Calcium hardness, temperature and atmospheric pressure, researchers used the Multiparameter Probe, model HI9828, Hanna manufacturer.

Programmable Onset Hobo loggers (U20) were used to monitor the river's water column level with a 30 minutes



CONCLUSIONS

The interactions between climatic factors, physicochemical parameters of the river and the region's highly soluble lithology facilitates the opening of new underground ducts and drains that capture surface water. This process gradually remodels the relief and transforms the underground landscape. Further studies are needed to understand better the dissolution of the rock and the development of the karst in the region.

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measurement interval. The loggers' accuracy was set to be



water rise in caves.

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