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## Study on hydrogeological model of leakage of Sanyou Cave inscription area of Yichang City, China

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The Sanyou Cave as a natural large-scale karst cave is located in Xiling gorge of Yangtze River. 47 Cliffside carvings discovered in Sanyou Cave were awarded as national key cultural relics of China in 2006. With the long-term influences of natural geological functions and human activities, the Sanyou Cave shows serious environmental geological diseases, especially in water permeation, which is not good for long-term preservation of the Cliffside carving. In order to explain the mechanism of water permeation, the hydrogeological investigation and karst survey were performed in site by the methods of mapping, sampling and investigation. The rock, soil and water samplings were taken to laboratory experiment to test the mineral composition and microstructure. The types and burial conditions of groundwater in Sanyou Cave were ascertained. Basing on the investigation of recharge, runoff and drainage of groundwater, the hydrogeological model for Sanyou Cave had been established and used to evaluate the risk of water permeation on the Cliffside carving. Finally, the prevention methods and suggestions were given to protect the relics.



Figure 1: Sanyou Cave inscription area of Yichang City, China

### References:

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