



## **Karst system response to climatic events: the case of Vora Bosco (Salento, Southern Italy)**

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Remarkable surface and subsurface karst landforms characterize the Apulia Region (Southern Italy). Vora Bosco is a cave located in Salento Peninsula, the southernmost sector of Apulia, and precisely in the Galatina countryside. It reaches groundwater at a depth of about 60 m from the topographic surface (elevation of the cave entrance: 64 m a.s.l.). The interception of water table makes Vora Bosco one of the most important caves in Apulia to study the complex hydrogeological dynamics in karst environment. Numerous monitoring actions have been implemented in order to collect meteorological data (external and internal temperature, relative humidity, rainfall, etc.), beside periodically controlling the chemical and microbiological parameters of groundwater, and the groundwater level as well.

The processing of cave temperature values is extremely interesting at the site. Three HOBO sensors, installed along the cave pathway at different depths, have collected so far interesting temperature and humidity data (monitoring active since November 2017). In detail, we will examine here two events that occurred in February 2018, during which a significant and sudden (one day) temperature values decrease (about 10 °C) was recorded in the cave environment. The sudden lowering of temperature is positively related with others data like external temperature, and groundwater temperature and level. More specifically, when sensors detect the lowering temperature, the external and groundwater temperature decrease, while groundwater level rises according to intense rain phenomena.

The monitoring, still ongoing, will proceed aimed to quantify the time in which the cave returns under steady state condition (as both concerns water and air temperature) and to comprehend the reasons why the sensors reveal the sudden temperature lowering also in cave sectors far away from the entrance.

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