

Natural Ventilation of Karstic Caves: New Data on the Nerja Cave (Malaga, S of Spain)

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Abstract In the Nerja Cave, there is a natural convective airflow which follows a seasonal model common in caves known as “chimney” characterized by, at least, two entrances at different altitudes. To explain this model, contradictory to the known entrances of the Nerja Cave, located at the same height, some research has been done in a surrounding cavity, known as the Pintada Cave. The obtained results confirm the existence of a physical connection between the Nerja Cave and the Pintada Cave, inaccessible to humans, and describe a very simplified, general model of airflow circulation between them, which allows for the removal of anthropogenic impact in the Nerja Cave during the most visited season in the year.

1 Introduction

The Nerja Cave, a good of cultural interest, in the category of Archeological Place and an internationally recognized heritage sight of Geological Relevance, is one of the most important tourist caves in Spain, with about 485,541 visitors annually for the period 1988–2013. The cavity, with a horizontal development and a volume of 300,000 m³ (Fig. 1), has three entrances, which are located at 158, 161, and 162 m above sea level (SEM 1985). About a third of the cave, the Tourist Galleries, is

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