Pattern of cave weather properties: a study of cave micrometeorology

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Abstract

A detailed understanding of cave micrometeorology is helpful in better understanding of various physical, chemical and biological processes happening in natural cave environments, including the growth and maintenance of cave speleothems. Past research studies done to understand cave weather are in general insufficient for detailed understanding of pattern of cave weather properties. This is because observations made in various cave systems throughout the world have never been synthesized, and also because of the incoherence of measurement technology and terminology.

The purpose of this study is to begin to remove the inconsistencies in past studies and to explain naturally occurring processes with the help of new field observation and mathematical modeling techniques applied to caves in Carlsbad Cavern National Park (CCNP).

Given the vastness of the research field, we have focused on the application and usefulness of mathematical modeling techniques. However, our review of previous modeling attempts to understand cave weather has shown that existing models need a higher order of sophistication than the current state in order to understand the space-time pattern of major cave weather properties.

My background:

I was born in Kanpur, UP, India. I did my bachelor’s from Indian Institute of Technology (BHU), India. After finishing my bachelor’s, I worked for NTPC ltd. for two years. Then I came the USA and joined the department of Earth and Environment Science in Fall, 2007. Today, I am presenting my talk on “Pattern of cave weather properties: a study of cave micrometeorology”.