



Damaged Speleothems of the Ms 8.0 Wenchuan Earthquake, China, and the Implications for Seismology

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Broken or deformed speleothems can be used for paleoseismic research since they can be dated with radiometric techniques. But it rarely happens that speleologists are in caves just at the time of strong earthquake shocks, and there are only a few published cases of observations from caves visited immediately after an earthquake. So that it is really plausible that earthquakes break speleothem. Therefore, it needs more evidence of recent strong seismic to prove the way of speleoseismology.

In order to provide more on-site data for speleoseismology, four underground cavities in the Longmenshan Fault Zone where a devastating Ms 8.0 earthquake has occurred at 2:28 pm, May 12, 2008, have been selected for speleoseismic analysis. We document damaged carbonate cave deposits by Wenchuan earthquake, including collapsed and broken stalactites, in-situ severed stalagmites and stalactites, collapsed bedrock ceilings, and strictures; and discuss the implications of damaged speleothems as possible earthquake recorder. The results show that massive damaged speleothem, as an effective method for paleoseismic, can compatible with strong earthquake.