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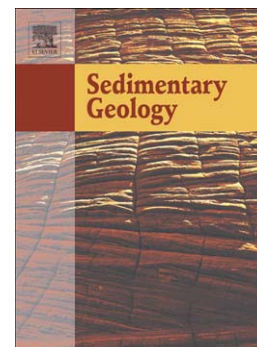
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Stable isotope composition alteration produced by the aragonite-to-calcite transformation in speleothems and implications for paleoclimate reconstructions

Haiwei Zhang^{a,b}, Yanjun Cai^{a,c*}, Liangcheng Tan^a, Shijiang Qin^a, Zhisheng An^a

^a*State Key Laboratory of Loess and Quaternary Geology, Institute of Earth Environment, Chinese Academy of Sciences, Xi'an 710075, China*

^b*University of Chinese Academy of Sciences, Beijing 100049, China*

^c*Institute of Global Environmental Change, Xi'an Jiaotong University, Xi'an 710049, China*

Abstract

Aragonite, a mineralogical constituent of speleothems in cave environments, is unstable and susceptible to inversion to calcite, a diagenetic process that involves changes in the mineralogy, texture and geochemistry of speleothems. However, the exact alterations of stable isotope compositions during such diagenesis have not been fully investigated. In this study, two aragonite stalagmites (SN3 and SN15) from Shennong Cave, southeast China, were found partially inverted to calcite, as determined by X-ray diffraction (XRD) and scanning electron microscopy (SEM) analyses, and thin-section inspections under microscope. The fibre relics and textural ghosts of aragonite preserved in coarse and equant mosaics calcite crystals clearly indicate that the calcite in these two stalagmites were inverted from aragonite. The

*Corresponding author. Tel: +86 029 88323194.

E-mail address: yanjun_cai@ieecas.cn (Yanjun Cai).

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