



Abrupt climate change of East Asian Monsoon at 130kaBP inferred from a high resolution stalagmite record

X. Jiang, Y. Wang

College of Geography Science, Nanjing Normal University, China (strawjxy @163.com)

Asian monsoon climates were controlled by the changes both of the North high latitudes ice sheets and low latitude ocean climate system. A well-defined age and process of the Asian monsoon Termination II (TII) can help us to understand the roles of the tropical ocean and Northern mid-high latitudes insolation in driving the ice-age cycles. Six ^{230}Th ages and 472 oxygen isotope data of a stalagmite from Shanbao Cave in Hubei Province characterize the East Asian Monsoon precipitation from 133 to 127 ka. The decadal-scale high-resolution $\delta^{18}\text{O}$ record reveals a detailed transitional process from the Penultimate Glaciation to the Last Interglaciation. As established with ^{230}Th dates, the age of the Termination II is determined to be 129.5 ± 1.0 kaBP, which supports the Northern Hemisphere insolation as the triggers for the ice-age cycles. In our $\delta^{18}\text{O}$ record, the glacial/interglacial fluctuation reaches about 4‰, almost the same level as in other Asian Monsoon cave stalagmite $\delta^{18}\text{O}$ records, so 4‰ fluctuations in stalagmite $\delta^{18}\text{O}$ can be considered as a criterion for the glacial/interglacial cycles in Asian monsoon controlled-caves. The transition of the glacial/interglacial period in our record can be recognized as four stepwise stages, among which, a rapid rise of monsoon precipitation follows the stage of “Termination II pause”. The rapid rise is synchronous with the abrupt change of global methane concentration, which reflects that an increase in both Asian Monsoon precipitation and tropical wetland plays an important role in the global climate changes.