

A possible persist dry period from 4,500-2,500 BP in Northern Vietnam inferred from speleothem geochemical data

從北越石筍的地化紀錄中看中全新世可能存在的乾事件

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Abstract

Punctuated with a short-term period of Little Ice Age at 15-19 centuries, the paleo-Asian monsoon in the Holocene have widely been considered stable over 4 decades. Recent reports of weak decadal- and centennial-monsoon episodes, such as 8.2-ka and 9.2-ka abrupt events induced from North Atlantic ice-rafted debris events and ones related to solar change, suggested a dynamic Holocene Asian summer monsoon. Three Holocene stalagmites, YHS-1 collected from Ninh Binh and S14-4 and S14-BR from Cave S14 in Son La. The Ninh Binh and S14 caves are 50 and 200 km away from the western coast of the South China Sea, respectively. Multi-proxy evidences of hiatus, growth rate, and $\delta^{18}\text{O}$ values, suggest a dry period from 4.5-2.5 ka in the northern Vietnam. The observations, combined with records in Qinghai Lake sediment, Guliya ice core, and central-Taiwan pollen, imply that a possible millennial-scale weak Asian monsoon over the period.