550-Year Climate Periodicity in the Yunnan-Guizhou Plateau During the Late Mid-Holocene: Insights and Implications

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

ID 4683399
Author(s) Li, Youwei; Fleitmann, Dominik; Wang, Xiangli; Péreez-Mejias, Carlos; Sha, Lijuan; Dong, Xiyu; Wnag, Deyan; Zhang, Rui; Qu, Xiaoli; Cheng, Hai
Author(s) at UniBasel Fleitmann, Dominik ;
Year 2023
Title 550-Year Climate Periodicity in the Yunnan-Guizhou Plateau During the Late Mid-Holocene: Insights and Implications
Journal Geophysical research letters
Volume 50
Pages / **Article-Number** e2023GL103523
Significant multi-centennial climate oscillations have been documented in a number of well-dated climate records across the Holocene epoch and left various imprints in human cultural history. In this study,
we developed speleothem δ 13C, δ 18O, trace elements, and lamina thickness records from the Yunnan-Guizhou Plateau (YGP). Our high-resolution and precisely dated records show a significant ∼550-yr cycle as the dominant pattern of regional temperature and vegetation variations between ∼5,870 and ∼3,670 years ago. The phase analyses of the 550-yr cycles among our speleothem records, other Northern Hemisphere climate records, solar activity index, and Atlantic meridional overturning circulation (AMOC) variations suggest that this climate cycle has a large spatial extent, and may be causally linked to the AMOC changes through coupled oceanic-atmospheric processes. Additionally, the first cold phase of the ∼550-yr cycle in our records coincides with the major cultural development on the YGP at ∼5,500–5,000 years ago, suggesting a critical relationship between climate and prehistorical cultural changes in the region.

ISSN/ISBN 0094-8276
Full Text on edoc ;
Digital Object Identifier DOI doi. org/10.1029/2023GL103523