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Nong Thale Pron – a key site from southern Thailand for studying monsoon variability during the past 15000 years

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Studies of marine sediments, cave speleothemes, annually laminated corals, and tree rings from Asian monsoon regions have added knowledge to our understanding of the factors that control inter-annual to millennial monsoon variability in the past and have provided important constraints for climate modeling scenarios. In contrast, the spatial and temporal pattern of sub-millennial scale monsoon variability and its impact on land cover in SE Asia are still unresolved. This shortcoming stems from the fact that temporally well-resolved paleo-environmental studies are missing from large parts of SE Asia, especially from Thailand. Given that global and regional climate models are increasingly using terrestrial paleo- data to test their performance, past changes in land cover are therefore important variables to better understand feedbacks between different Earth systems.
We obtained sediments from Lake Nong Thale Pron, in southern Thailand (8º 10‘N, 99 º23‘E; 380 m.asl). The aim of our study is to reconstruct lake status changes and to evaluate whether the extent of these changes are linked to known shifts in monsoon intensity and variability. Preliminary results show that lake infilling started more than 15,000 years ago and that the sediments cover the last deglaciation and the Holocene. Current analyses include Itrax XRF core scanning, loss-on-ignition (LOI at 950 and 550ºC), CN elemental and isotopic composition. We expect that our results will be able to give a picture of how the lake's status has changed over time and whether the extent of these changes is linked to known shifts in monsoon intensity and variability.