

Cellulose oxygen isotopic time series of teak disks collected from Java, Indonesia

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Tree rings are useful to reconstruct terrestrial paleoclimate because of their precise dating and high time resolution. In the tropics, there are few dendroclimatological studies because it is difficult to collect tree samples with annual rings. In Indonesia, the master chronology of tree ring has been constructed since the study of Berlage (1931) and performed correlation analyses with precipitation data (e.g., D'Arrigo et al., 1994). Moreover, previous studies of Poussart et al. (2004) and Schollaen et al. (2013) measured oxygen isotope ratios of Javanese teak, suggesting that it could be an effective proxy of precipitation. However, these previous studies conducted at limited area of Java Island, and thus the spatial coherency still remains unknown. In this study, we measured cellulose oxygen isotopic compositions of ten teak disks collected at four sites in Java, and verified the synchronicity of the time series variations.

Keywords: isotope, oxygen, tree ring, cellulose, Indonesia