



Pilot study: stable isotopes in teak from marine-influenced equatorial Indonesia as local rainfall amount and remote ENSO indicators

Michael Evans (1), Intan Nurhati (2), Sri Yudawati Cahyarini (3), and Rosanne D'Arrigo (4)

(1) University of Maryland, College Park, Geology, College Park, United States (mnevans@umd.edu), (2) Research Center for Oceanography, Indonesian Institute of Sciences, Jakarta, Indonesia (intan.suci.nurhati@lipi.go.id), (3) Research Centre for Geotechnology, Indonesian Institute of Sciences, Bandung, Indonesia (sycahyarini@gmail.com), (4) Lamont-Doherty Earth Observatory, Columbia University, Palisades, United States (rdd@ldeo.columbia.edu)

We present preliminary analysis of carbon and oxygen isotopic data collected from 25 years of ring-dated samples from three replicate increment cores from Muna, Sulawesi, Indonesia, for the time interval 1980-2005. Interannual variations in oxygen isotopic data are significantly correlated with ENSO events as indexed by October-May average NINO_{3.4} SST anomaly. Compositing the records improves correlation significance relative to that for individual series and relative to that for ring width observations from the same samples: the level of explained variance in the stacked composite is about 6 times higher for oxygen isotopic data than for ring width data composited from the same three increment cores and 25 year period. Results do not suggest that carbon isotopic data reflect interannual precipitation or humidity variations in a simple way, but analysis and forward modeling may assist further interpretation of these data.