



## **Precipitation variability in subtropical southern Taiwan during the last 21,000 years**

**T.-N. Yang** (1), K.-Y. Wei (2), T.-Q. Lee (1), H.-F. Chen (3), S.-R. Song (2), H.-W. Chiang (2), Y.-G. Chen (2), M.-T. Chen (3)

(1) Academia Sinica, Taiwan, (2) National Taiwan University, Taiwan, (3) National Taiwan Ocean University, Taiwan

The late-Quaternary paleohydrological change was reconstructed using a continuous 21-ky record of Corganic/Ntotal atomic ratio (OC/TN) of total organic matter extracted from a 16-m sediment core from Tung-Yuan Pond in subtropical southern Taiwan. The OC/TN values higher than 14 are indicative of terrestrial plant source, whereas values lower than 7 imply algae origin. Sediments with high values of OC/TN associated with increased OC and quartz contents suggest large runoff resulted from extensive rainfall during the late Marine Isotope Stage 2, the early and mid-Holocene, while those measurements with low values at the late Last Glacial Maximum (LGM), Younger Dryas (YD) and late Holocene. Paleomagnetic parameters were also used as additional proxies. High values of S-ratio indicate relative wet circumstances, generally, in association with high OC/TN ratios. The various proxies suggest collectively that extensive precipitation occurred during the deglacial, early Holocene, mid-Holocene Hypsithermal and between 4-2 ka. In contrast, the late LGM, the YD and late Holocene (2-1 ka) are characterized by less precipitation. The early Holocene (10-8 ka) witnessed high frequency hydrological variability. Moreover, after 6 ka (the late mid-Holocene Hypsithermal) the area appears receive less precipitation might reflect the weakening summer insolation.