



## **Demarcation of Typhoon-induced Sedimentary Layers from Lake Records in Southeast China**

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Understanding the frequency and cyclicity of extreme events such as tropical storms, heat waves, floods and droughts in monsoon-governed Asia is crucial for the adaptation and mitigation of climate-driven troubles and post-event consequences. Such studies are also critical for the development of future climate-related policies, given that the loss of life and properties during such events in Asia are always many-folds higher than that of the effect of similar disasters in the developed world. Lakes located along the path of typhoons in East Asia may preserve an evidence of storm intensity, because an increased erosion in the confined catchment may increase the clastic sedimentation. Here we investigate ca. 90 cm-long sediment core retrieved from Tian Lake, a coastal island lake located off SE China, for sedimentological, radiometric and geochemical parameters, aiming to reconstruct the effect of past typhoons on the sedimentation history of the lake. We found 4-5 sand-dominated layers in between the regular fine sediments deposition and these sand layers show a close consistency with periods of intense typhoons in the instrumental record. Although the instrumental record suggests an average of 16 typhoons/year in the western North Pacific, the preservation of only 4-5 sand-dominated layers during the last ca. 100 years of accumulation in our core indicates that the sedimentation pattern in Tian Lake may be very sensitive to intense typhoons with category 3 and above. This study will attempt to compare our lacustrine records with the suitable instrumental and other proxy records for understanding mechanisms responsible for intense typhoons and related environmental changes in SE China in the past century.