



Tropical Cyclone Climatology at the Last Glacial Maximum and mid-Holocene

S. J. Dadson (1), J. Galewsky (2)

(1) Centre for Ecology and Hydrology, Maclean Building, Crowmarsh Gifford, Wallingford, Oxfordshire, OX10 8BB. Tel: +44 (0)1491 838800; Fax: +44 (0)1491 692424. Email: sjdad@ceh.ac.uk. (2) Department of Earth and Planetary Sciences, University of New Mexico, Albuquerque, NM, 87131, USA. Phone: +1 (505) 277-2361 Email: galewsky@unm.edu

Variations in tropical cyclone climatology during the late Quaternary remain poorly constrained. It is not known whether or how the frequency, intensity, or spatial pattern of tropical cyclones might have changed with the Earth's climate during this period.

Here, we present an analysis of data from global climate model experiments from the Palaeoclimate Model Intercomparison Project to show the potential changes in tropical cyclone climatology in Taiwan. Preliminary model results using the ECHAM climate model show a six-fold increase in typhoon-season precipitation since the Last Glacial Maximum and a five fold increase in precipitation variability during the same period.

These findings are supported by our earlier observation (Dadson et al., 2003, *Nature* 426:648-651) that storm-driven erosion rates in Taiwan may have increased by up to an order of magnitude since the Last Glacial Maximum. Palynological observations from the region also indicate increased precipitation in the region since 18 kyr. We explore the possibility of using more advanced statistical and dynamical techniques to extract information on tropical cyclone palaeoclimatology from global climate model output.