

## **Role of seasonal transitions and the westerlies in East Asian paleoclimate**

JOHN C. H. CHIANG<sup>1</sup>

Dept. of Geography and Berkeley Atmospheric Sciences  
Center, University of California, Berkeley CA  
(jch\_chiang@berkeley.edu)

<sup>2</sup>

<sup>3</sup>

The East Asian Summer Monsoon is unique amongst summer monsoonal systems in its northward extent as well as in its complex seasonality, exhibiting dynamically distinct rainfall stages and abrupt transitions between them. Previous studies have alluded to the seasonally-varying downstream influence of the westerlies flowing around the Tibetan Plateau as central to the rainfall seasonality. I propose a hypothesis that the East Asian summer rainfall variability and change arise through modulation in the meridional position of the westerlies impinging on the Plateau, which in turn altered the timing and duration of its seasonal transitions. The viability of this hypothesis is demonstrated through examples from paleoclimate variations and observed modern-day variability. The hypothesis provides testable predictions of East Asian paleoclimate, and I will discuss how recent paleoproxy results from East Asia fits within the context of this hypothesis. Time permitting, I will end with a discussion on the basic ingredients controlling the unique East Asian summer monsoon seasonality, with the Tibetan Plateau being a key influence.