Satellite Reveals Unique Asymmetry in Asian Monsoon

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An indicator of convection, TRMM rainfall data reveal a feature in the phase transition of the monsoon annual cycle that is unique to the monsoon over Asia and Australia: The maximum seasonal convection migrates smoothly southward from boreal summer to boreal winter, but on its return to the Northern Hemisphere, it jumps northward from the equator to 10-20°N in May. Li and Zhou investigated the cause of this asymmetric monsoon phase transition with an atmospheric general circulation model. Several factors, including the annual variation of the large-scale Walker circulation over the Indian and Pacific oceans, were examined. The cause for the asymmetry can be found in the response of sea surface temperature, which in boreal fall cools gradually around the equator leading to a smooth transition of convection to the Southern Hemisphere, whereas in boreal spring (May), SST around the equator is cooler than the Asian continent.