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Department of Atmospheric Sciences & IPRC Joint Seminar Announcement

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SCHOOL OF OCEAN AND EARTH
SCIENCE AND TECHNOLOGY
UNIVERSITY OF HAWAI'I AT MĀNOA

SEMINAR TITLE:

A New Mechanism for El Nino Impact to Tropical Atlantic

Professor Tim Li

I.P.R.C. Senior Researcher

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Date: Wednesday, February 14, 2018
Refreshments: 3:00pm at MSB courtyard
Free Cookies, Coffee & Tea Provided
(Please Bring Your Own Cup)
Seminar Time: 3:30pm
Location: Marine Sciences Building, MSB 100

Abstract

Observational studies showed that most significant response of Atlantic SST to El Nino is tropical North Atlantic (NTA) warming. The maximum warming appears at 10N-20N, 3-5 months after a peak El Nino. So far four hypotheses have been proposed to understand this ENSO – TNA connection. The first hypothesis is that El Nino remotely affects Atlantic trade wind through the Pacific – North America (PNA) pattern. The second hypothesis stressed the role of anomalous Walker Circulation and Atlantic local Hadley cell. The third hypothesis emphasized the effect of precipitation anomalies over Amazon and remote Gill type response. The fourth hypothesis is that the TNA warming is a result of the “tropospheric temperature mode” forcing through the change of atmospheric static stability, boundary layer moisture and surface latent heat flux.

In this talk, I will discuss issues and limitation of the existing theories above. Through a detailed, in-depth analysis of atmospheric and oceanic anomaly fields, we reveal a new El Nino-TNA teleconnection mechanism, namely, a delayed Kelvin wave – ITCZ modulation mechanism.