UNIVERSITY of HAWAI'I MĀNOA

Department of Atmospheric Sciences Seminar Announcement

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SCHOOL OF OCEAN AND EARTH SCIENCE AND TECHNOLOGY

Cluster Analysis of Eastern and Central North Pacific Tropical Cyclones

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You are invited to a Zoom meeting.
When: March 3, 2021 at 3:30PM HST

Register in advance for this meeting:
https://hawaii.zoom.us/meeting/register/tJYvfu2urD8jEtb2-aKc4ISPr4W9YuHre-tE

After registering, you will receive a confirmation email containing information about joining the meeting.

Abstract:

While the eastern and western north Pacific's tropical cyclones have been thoroughly studied, the central Pacific hurricanes are often overlooked, which poses a problem for those living in Hawaii. Using a mixture Gaussian model and EM algorithm, the Eastern and Central North Pacific tropical cyclones are clustered into different track types. The best-track hurricane data from 1966 to 2019 has thus been sorted into four distinct tracks. Once separated, each track type is examined in terms of frequency, lifetime, accumulated cyclone energy, intensity, and maximum strength.

Additionally, the relationship of ENSO, large-scale circulation, and sea surface temperatures has been examined in order to gain a better understanding of regional TC activity over the central North Pacific and eastern North Pacific. In particular, Central Pacific and Eastern Pacific El Nino events have been identified in an attempt to identify evolving characteristics of hurricanes in conjunction with changing sea surface temperature anomaly trends. The various phases of ENSO have been shown to influence the genesis location, maximum wind speed, intensity, and translation speed of tropical cyclones.