MMM SEMINAR SERIES

Convectively Coupled Equatorial Waves

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Convectively Coupled Equatorial Waves (CCEW) are a cause of a substantial fraction of tropical rainfall variability. Early modeling starts with Matsuno in 1966, but only for an adiabatic atmosphere. A lot of research has been done in the past few decades on expanding the Matsuno theory to a diabatic atmosphere and therefore to the real world.

In this talk I will talk about a simple analytical linear model that my group has been developing over the past 20 years. This model captures the main characteristics of CC Rossby wave, CC Kelvin wave and the MJO. Convection-parametrization closures that were tested are: CAPE, convective inhibition, cloud radiation interactions (CRI), wind-induced surface heat exchange (WISHE) and moisture closure.

Finally, I will compare our model with the Khairoutdinov and Emanuel model and talk about the "minimal difference" model between the two that captures the main characteristics of the CCRW and the MJO. The main physical mechanisms that drive the MJO and CCRWs based on the "minimal difference" model are WISHE and CRI.

Thursday, 3 November 2022, 2:00pm

Refreshments 1:45pm

Please also join colleagues for refreshments and informal discussion after the seminar until 3:30pm

NCAR-Foothills Laboratory, 3450 Mitchell Lane

FL2-1022, Large Auditorium

Seminar will also be live webcast

https://operations.ucar.edu/live-mmm

Participants may ask questions during the seminar via Slido.