HyARC Seminar (HyARC Seminar#184)

Date: July 31 (Friday) 13:30-

Room: The meeting room (#617) of Research Institutes Building.

Speaker:Prof. Dave Raymond (New Mexico Institute of Mining and Technology)

Title: Recent Advances in our Understanding of Tropical Maritime Convection

Abstract:
Recent observations of convection over tropical oceans as well as innovative numerical modeling techniques and advances in theory have given us new insight into how convection interacts with large-scale tropical disturbances. These disturbances divide into two distinct types, rapidly moving divergent systems such as equatorial Kelvin waves and slowly moving rotational systems such as tropical easterly waves, tropical depressions, equatorial Rossby waves, etc. Though convection in both cases appears to be controlled by a deep form of convective inhibition, the dynamics of the inhibiting layer differ markedly between the two; gravity wave dynamics are particularly important to the former, whereas balanced potential vorticity dynamics appear to govern the latter. Furthermore, variations in tropospheric moisture and moist convective instability are crucial to the slow modes, while they play less of a role in rapidly moving modes. How the pieces of this puzzle fit together will be described in this talk.

(given in English)