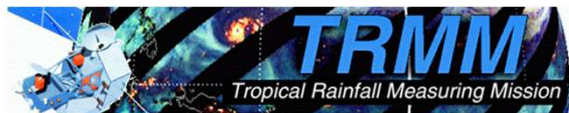


# How does the vertical moisture profile affect precipitation from tropical convective systems?

# How does the precipitation from tropical convective systems change in El Niño versus La Niña?

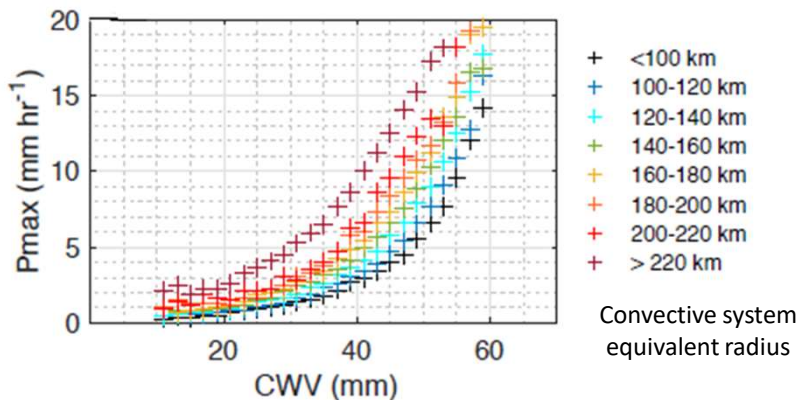


(3) Collocate precipitation

Use multiple satellite datasets and reanalysis



(1) Track convective systems



Consistent relations of column water vapor and convective system  $\dot{P}$  over land and ocean indicate the utility of a deep-inflow buoyancy framework.

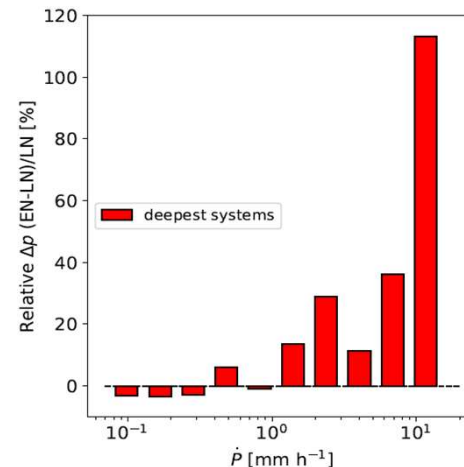


(2) Collocate SST,  $q_v$ , winds, and CAPE

$$\frac{\partial w}{\partial t} = B - \frac{1}{\rho} \frac{\partial p'}{\partial z}$$



(3) Collocate precipitation



We can understand  $\Delta \dot{P}_{EN-LN}$  via changes in the meridional overturning and free tropospheric humidity in El Niño versus La Niña.