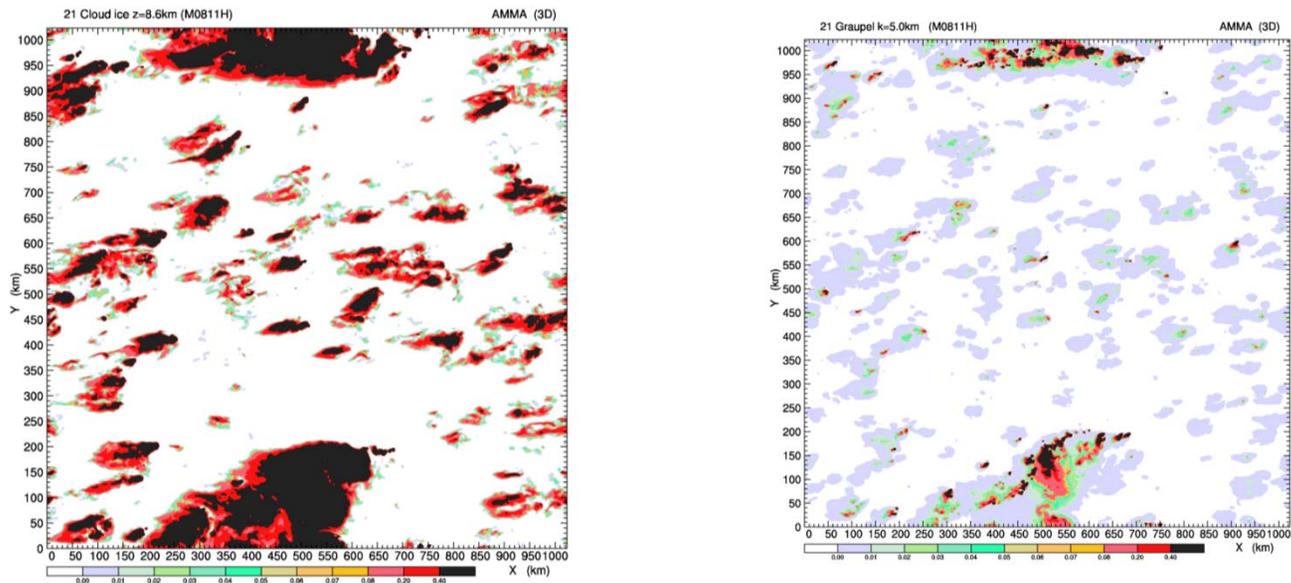


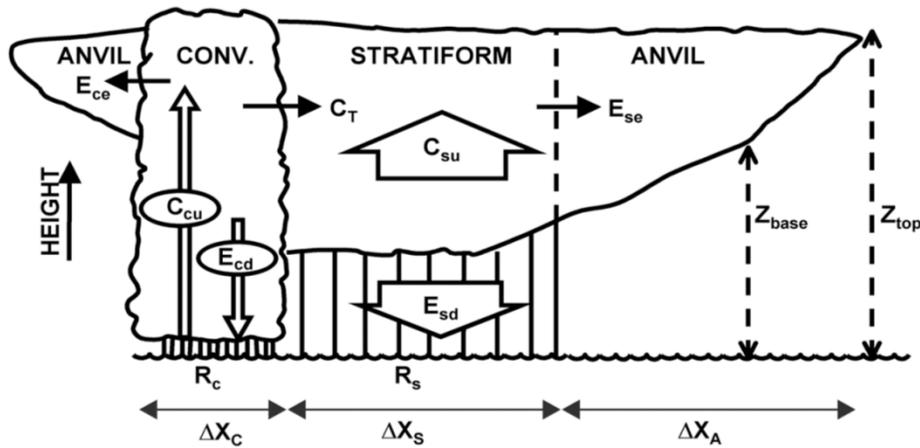
# Comparing the Water Budget between AMMA and TWP-ICE Clouds

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An AMMA simulation with horizontal distributions of cloud ice in the upper troposphere (left) and graupel in the middle troposphere (right).

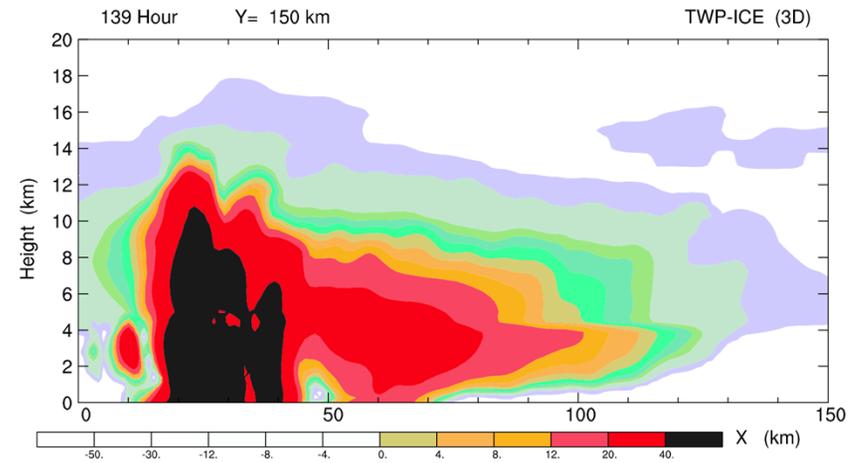
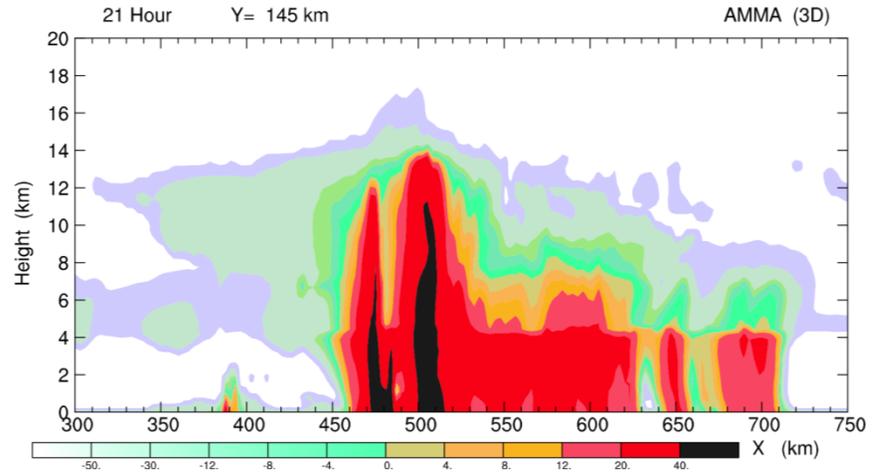
# Water Budget Computation



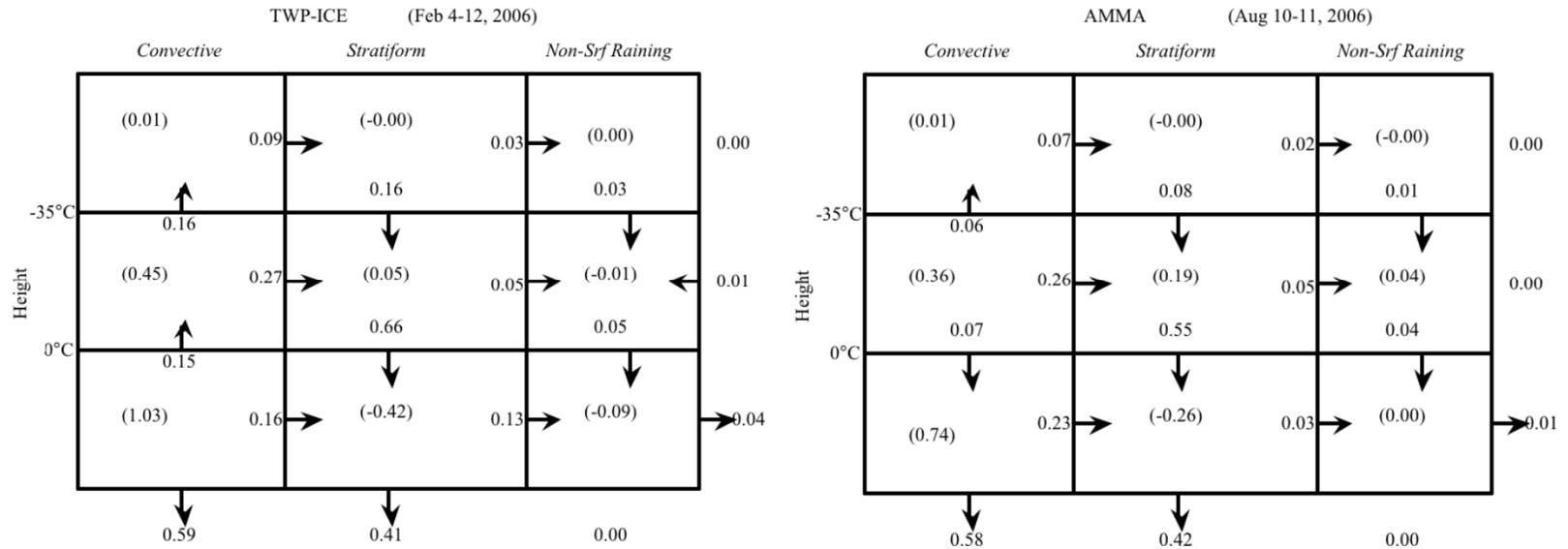
*LEFT* Schematic of deep convection, stratiform and anvil regions with water transportation (from Houze et al. 1980).

*RIGHT TOP* a vertical cross section of AMMA MCS

*RIGHT BOTTOM* a vertical cross section of TWP-ICE MCS



# AMMA vs TWP-ICE



Water budgets of modeled AMMA (right) and TWP-ICE clouds (left). All variables are normalized with the total precipitation amount.

# Conclusion and Future Work

- Warm precipitation processes are relatively stronger in TWP-ICE clouds;
- Stratiform ice processes are relatively more important in AMMA clouds;
- More cases will be studied for statistics characteristics and sensitivity of water budget to various factors (e.g., cloud microphysics, wind shear);
- Cooperation for other cases.