

Motivation: Can convective organization be steered by competition between organized and unorganized clouds?

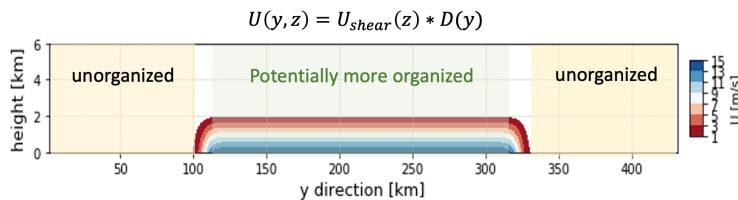
Idealized CRM simulations by NCAR Cloud Model 1 (CM1):

Domain size: 450 x 450 km² (dx=2km), 65 levels to 28 km

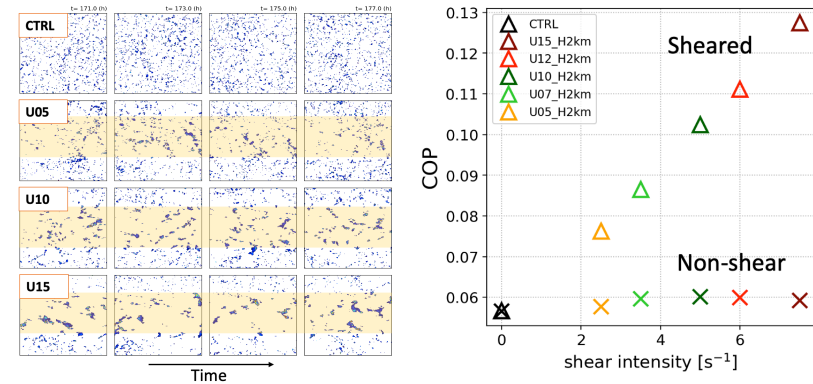
Controlled forcing: Homogenous radiative cooling (~4K/day) with corresponding SFX compensated to maintain energy conservation.

Simulation time: 10 days (last 5 days for analysis)

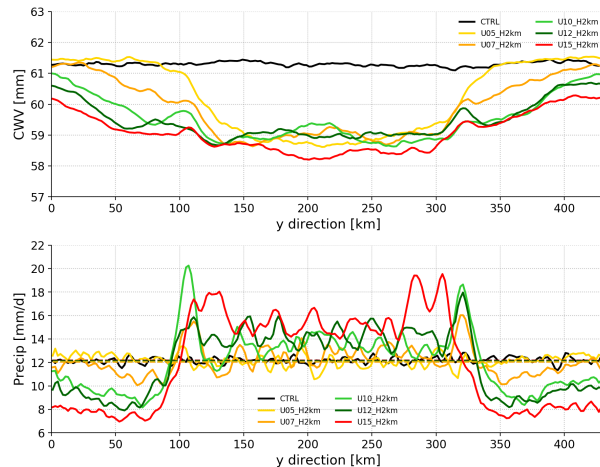
Imposing *shear* to generate organization gradient over the domain



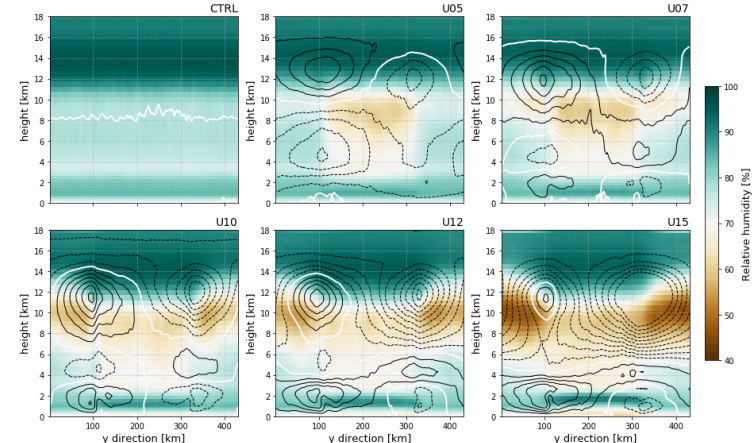
❖ Controlling organization patterns/gradient in the domain



❖ Responses of vapor and precipitation in two regions



❖ Resulting coupled circulations and organization gradient



- A drying effect is associated with organized convection and proportional to organization gradient over the domain.
- organized convection *outcompetes* unorganized one and is supported by the resulting, self-generated circulations.