

Design of A Global Cloud-Resolving Model (GCRM)

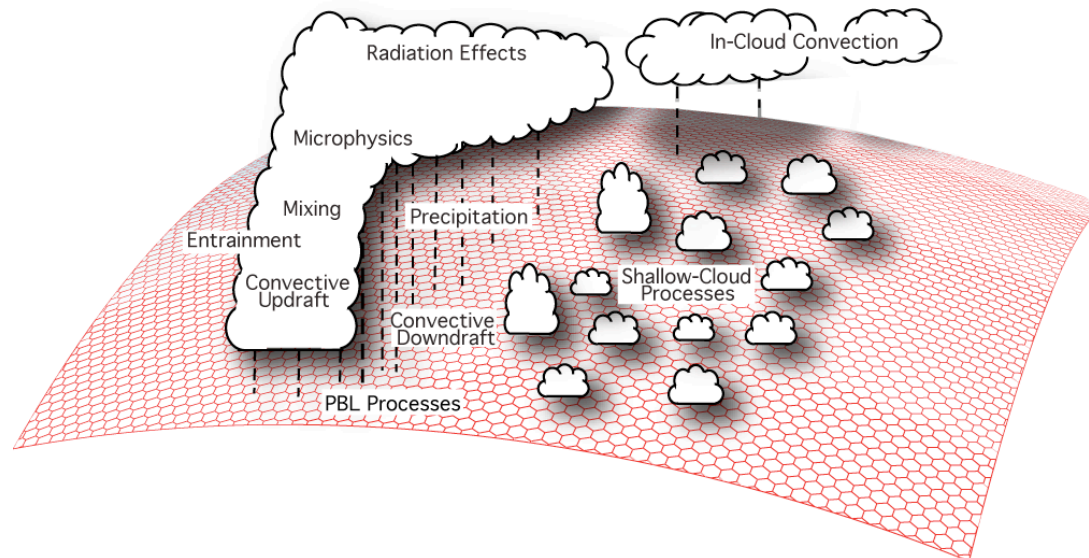
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Why GCRMs ?

GCRMs can resolve multi-scale atmospheric processes from cloud-scale to planetary-scale while conventional global models can only cover from synoptic-scale to planetary-scale

A majority of the moisture related, radiative and turbulent interactions in Earth's atmosphere takes place in cloud scale.



Main Design Features

- *Unified* governing equations to maintain convergence of solutions between all scales
- Vector-vorticity dynamical core to better simulate the vortex motion and vortex interactions
- A hexagon-pentagon horizontal grid to properly cover the sphere
- Improved formulations of physical processes, particularly, turbulence
- Special care for computational efficiency throughout without compromising from the major principles of model design

3-D view of the interior grid

