

Attempt of Cloud Microphysics in a GCM

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Cloud microphysics is an essential physical mechanism for precipitation process and associated chemical processes. However, representation of the cloud microphysics is very crude in current GCMs, mainly because of limitation of spatial resolution and crudeness of its physical parameterization. The present talk discusses about how the microphysics being implemented in current GCMs with horizontal resolution of order of 100 km or less. With such a resolution, the convective mixing, particularly in the tropics, can not be represented by the microphysics. The present approach is to include in a GCM the current cumulus parameterization for the vertical mixing and the microphysics for precipitation processes. Several attempts are carried out for developing such models, and the results are shown in the presentation.