

Numerical simulation of moist convection in Jovian atmosphere: the effect of large scale downdraft.

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Convection in the Jovian atmosphere is examined using a high-resolution numerical model that incorporates phase change and simplified cloud microphysics of water.

The convection below the WCL is similar to Benard convection, whereas the convection above the WCL is similar to cumulonimbi in the terrestrial atmosphere.

When the top of the initial moist layer is shifted downward, the cloud convection above remains weak for a long time, after which vigorous convective motion begins. Such cycle of the quiet period and vigorous convective period may exists in certain region of Jovian atmosphere, e.g. NEB.