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Thijs Heus* (t.heus@csuohio.edu), Cleveland, OH 44115. *On the interaction between the organization of clouds and climate variability.*

Cloud-aerosol interactions remain one of the largest uncertainties in climate modeling. The amount of aerosol in a cloud influences the amount of precipitation. If the precipitation exceeds a certain threshold, it will create feedback on the cloud field through cold pools and mesoscale organization. We study the sensitivity of trade wind cumulus clouds to perturbations in cloud droplet number concentrations. The transient behavior and the properties of the near-equilibrium cloud field depend on the microphysical state and therefore on the cloud droplet number density. The primary response of the cloud field is deepening of the cloud layer, and results in a shorter cloud life time. (Received August 29, 2016)