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A convective cloud field model with a contemporary microphysics containing aerosol effects

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A convective cloud field model (CCFM) is substituted for a standard mass flux parameterisation of convective clouds in the global circulation model ECHAM5. The model is determining a spectrum of different convective clouds. These clouds have a high vertical resolution to allow the use of a more sophisticated cloud microphysic than usually found in current convection parameterisations. The microphysical scheme crudely incorporates aerosol effects. The parameterisation is evaluated at the ARM SGP site using the single column mode (SCM) and it captures most of the precipitation events well.