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Evaluation of a new convective cloud field model: precipitation over the maritime continent

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Abstract. A convective cloud field model (CCFM) is substituted for a standard mass flux parameterisation of convective clouds in a limited area atmospheric model (REMO) and is tested for a whole annual cycle (July 1997 to June 1998) over the West Pacific Maritime Continent. REMO with CCFM is run in 0.5-degree resolution and the model at the lateral boundaries is forced 6-hourly by ECMWF reanalysis data. Simulated precipitation from runs with the standard convection parameterisation and with CCFM is compared against two sets of observations. The use of CCFM clearly improves the simulated precipitation patterns and total rainfall over the whole model domain. The distribution between large-scale and convective precipitation becomes more realistic. CCFM shows to be a useful concept to describe convective cloud spectra in atmospheric models, although there are still similar problems with occasionally extreme precipitation as in the original set-up of REMO.

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