



The parameterization of shallow cumulus cloud amounts

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Shallow cumuli are ubiquitous over the Tropical Oceans and mid-latitude summer time boundary layer. They impact the thermodynamic structure of the lower atmosphere and through interaction with the solar radiation influence the surface energy budget.

In this work, we implement a physically based parameterization of shallow cumulus cloud fraction and couple this with the Bechtold-Kain-Fritsch convection scheme. A Single Column Model has been used to evaluate the performance of this package for the GCSS/EUROCS shallow cumulus diurnal cycle case. The scheme was implemented into the 3D Canadian Regional Climate Model (CRCM) and the representation of shallow cumulus convection and associated cloud fields evaluated over the tropical Pacific, following the Pacific Cross-Section Intercomparison (GPCI) experiment protocol.

Results of the single column and GPCI experiments will be presented.