

Radiative Convective Equilibrium (RCE)

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Radiative Convective Equilibrium (RCE) has long been a paradigm for climate and climate change studies. Here several atmospheric general circulation models are idealized to study how the parameterized physics help determine the properties of the system in RCE. In addition to classical RCE the effect of the surface coupling, the diurnal cycle, and water availability are explored through idealizations to the surface boundary conditions. The emergence of a diurnal cycle, and the reduction of water availability both markedly impact the behavior of the solutions, in some cases in ways that can be related to shortcomings in the parameterized physics.