



Idealized study of convection using a 3D CRM in radiative-convective equilibrium.

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Radiative-Convective equilibrium can be used as simple paradigm to investigate the role of convection in the climate system since one is interested in studying the statistical behavior of an ensemble of convective systems on a timescale much larger than any individual convective system. R-C experiments have been simulated with the purpose of comparing convective events and statistics once a perturbation is introduced that can reproduce some features of convection (aggregation and effects on convective parameters) that are observed or simulated with realistic physics (see GCMs). Then the ARPS model, a 3D fully compressible CRM able to simulate clouds on scales ranging from regional to micro-scales, has been run on the ECMWF HPF cluster in a parallel configuration on 4x4 processors on the horizontal domain after being modified to be suitable for these experiments. Within the AMMA-EU project, an idealized study of convective organisation using 2D (MOLON, 2D nonhydrostatic developed at ISAC-CNR) and 3D models, operated by the ISAC-CNR group and UniPg, has been carried out starting from the existing theories.