

Some theoretical questions about convective parameterization

Isaac Held, NOAA/GFDL

I'll start by contrasting the moist convective parameterization problem with that of parameterizing mesoscale eddies in the ocean. I will try to use this analogy to motivate a variety of issues, such as -- the relevance of the Hippocratic Oath for parameterizers; the importance of a theoretical framework for evaluating parameterizations; the transition with model resolution from schemes that try to do everything to those that improve on what the model is doing already; the question of whether or not a convective parameterization should be stable when run in non-rotating radiative convective equilibrium (RCE); the value of the linear response of RCE to imposed heat and vapor sources; and the potential value of hypo-hydrostatic rescaling (i.e. DARE, RAVE).