



Empirical Values and Assumptions in the Microphysics of Numerical Models

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Microphysics are parameterized in Global Circulation/Climate Models (GCMs), Cloud Resolving Models (CRMs), Regional Climate Models (RCMs) and Numerical Weather Prediction (NWP) models since microphysical processes operate at centimeter scale, thus well below model grid size. While more than 20 microphysics schemes have been described in the literature, all of them have a number of empirical values and work under a set of reasonable assumptions that model the problem in a simplified way. We review such choices aiming to provide a homogenous account of the Physics within the parameterizations, and to explore how new observations capabilities, chiefly the Global Precipitation Measuring (GPM) Mission, can help to improve our present understanding of the precipitation processes. This overview can also help to frame and advance the research in the human-induced, ongoing Climate Change, as those parameterizations are instrumental for GCMs and CRMs.