



Organized precipitating convection and global models

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There are two approaches for representing precipitating convection in global models used for research and prediction. Firstly, the implicit approach of contemporary convective parameterization, the practicable approach for long-term climate modeling and, secondly, the explicit approach in which convective triggering, transport, and closure are represented by explicit dynamics. In next-generation global weather prediction models (grid-spacing of order 10 km) the implicit and explicit approaches are non-exclusive – convective elements must be parameterized and mesoscale organization is represented by under-resolved explicit circulations. This juncture has both positive attributes and pitfalls. These are examined in the context of: i) organized warm-season precipitating convection over the continental United States, and ii) multi-scale convection occurring within the Madden-Julian Oscillation (MJO).