**A framework to evaluate IMEX schemes for atmospheric models**

We present a new framework to test Implicit-Explicit (IMEX) Runge-Kutta timestepping methods for the nonhydrostatic atmosphere. The framework is based on a system of normal modes that includes gravity, Rossby, and acoustic waves. Due to its increased complexity, the framework is more selective than the 2D acoustic system previously used in the literature. We use the framework to analyze known IMEX methods and to develop new ones.