MULTI-POINT FORWARD-BACKWARD SCHEME:

AN ALTERNATIVE TO THE SEMI-IMPLICIT METHOD

Akio Arakawa and Celal Konor

1. Motivation (with 1D advection equation)
2. Multi-point shallow-water equations: basic energetics
3. Space-centered multi-point 2-level explicit schemes for linearized 1D shallow-water equations
   a. Stability __ Multi-point forward-backward scheme (MFB)
   b. Equivalent trapezoidal (ETZ) scheme
   c. Truncated ETZ scheme __ proposed MMF scheme
4. Stability analysis results
5. Experiments with 1D nonlinear shallow-water equations
6. Application to 2D shallow water equations
7. Application to 3D atmospheric models