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Irregular Grid Finite-Difference Techniques: Simulations of Oscillations in Shallow Circular Basins

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ABSTRACT

Finite-difference techniques for irregular computational grids are presented. Successful simulations of transient normal mode oscillations in shallow circular basins, where analytic solutions are known, demonstrate that these techniques can yield accurate results, even in situations involving a curved boundary. These techniques should prove to be quite useful for numerically forecasting storm surges in bays and estuaries where calculations are complicated by the curving coastline.

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