

Performance Analysis of ADCIRC's Wetting and Drying Algorithm in 2D

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ADCIRC is a system of computer programs for solving time dependent, free surface circulation and transport problems in two and three dimensions for coastal oceans, inlets, rivers and floodplains. These programs utilize the finite element method in space allowing for the use of highly flexible, unstructured meshes. We present a description and performance analysis of ADCIRC's wetting and drying (WAD) algorithm in two dimensions. The WAD used in ADCIRC is based on a simplified momentum balance between pressure and friction. Two, user specified, free parameters, H_0 and V_{\min} , affect both the performance of the WAD and ultimately the stability of the model. We will demonstrate the performance of the WAD using simplified topographies and a variety of forcing options including wind driven events.