

Well-balanced Component-wise Scheme for Shallow Water System

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We present a high resolution scheme for approximating the solution of shallow water flows with non-flat bottom. The main difficulties in driving a convergent scheme can be due to solutions that vanish in nontrivial parts of domain or problematic for near steady states. The basic methodology is to avoid characteristic decompositions in spatial discretization and using a local hydrostatic reconstruction to derive a Component-wise well-balanced scheme.

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