

## **A Simple Finite-Volume Method on a Cartesian Mesh for Pedestrian Flows with Obstacles**

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We consider a two-dimensional pedestrian flow model with obstacles governed by scalar hyperbolic conservation laws, in which the flux is implicitly dependent on the density through the Eikonal equation. We propose a simple second-order finite-volume method, which is applicable to the case of obstacles of arbitrary shapes. Though the method is only first-order accurate near the obstacles, it is robust and provides sharp resolution of discontinuities as illustrated in a number of numerical experiments.