IMPLICIT FINITE VOLUME METHOD COUPLED WITH EXPLICIT VOF METHOD AND A FULLY VOLUME PRESERVING METHOD

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Abstract

The SIMPLE-based Finite Volume Method is combined with the Volume of Fluid (VOF) method to solve the two-phase flow field. Interface conditions are satisfied by means of the continuous surface force (CSF) methodology. A geometrical Eulerian interface reconstruction method is presented, where the volume fraction field is fully conserved. In addition, while the momentum equations are solved implicitly, an explicit time split scheme is used for the volume fraction equation. Computational results presented for dam break and sloshing tank problems are shown to be in good agreement with other results reported in the open literature.