

An assignment procedure from particles to mesh that preserves field values Novelty file

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Received . . .

- Assignment procedures, from the particles onto the mesh, are key for the performance of mixed Eulerian-Lagrangian simulations
- Several known procedures are presented and assessed, including the well-known FLIP, along with a new one (“mass assignment”) which emphasizes preservation of information
- More precisely, the assignment from the particles onto the mesh and back yields the same field values when the particles coincide with the mesh nodes
- The procedures are tested on three scenarios: simple 1D convection, 2D convection of Zalesak’s disk, and a CFD simulation of the Taylor-Green periodic vortex sheet
- Mass assignment is seen to be clearly superior to other procedures