IMMERSED BOUNDAY METHOD AND ITS APPLICATIONS

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In the present study, both dynamic and thermal fields with moving rigid boundary are investigated by using an immersed-boundary method[1, 2]. This is achieved via direct momentum and energy forcing on a Cartesian grid by combining "solid-body forcing" at solid nodes and interpolation on neighboring fluid nodes. Grid-function convergence tests also indicate second-order accuracy of this implementation with respect to the L1-norm in time and the L2-norm in space. Several test problems[3, 4, 5, 6] are examined to explore its capability to predict dynamic and thermal fields.

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