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Adaptation of an immersed interface method for high-speed flows[1] VINICIUS AURICHIO, ATTILIO CUCCHIERI, MARIA BAMBOZZI, Univ de Sao Paulo — We propose a new hybrid method for simulating high-speed flows past bluff bodies. An immersed interface method accounts for material discontinuities precisely located on the body surface. Shock waves may form in high-speed flows and their exact locations are unknown, since they are spread across a narrow region. A new high-order shock detector finds near discontinuities in the fluid and the Weighted Essentially Non-Oscillatory (WENO) method is applied on these regions. WENO's embedded shock detector can yield false positives due to its low order; the use of a high-order detector helps to partially solve this problem.

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