

Abstract Submitted  
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**Implementation of Immersed Boundary Method in WENO Scheme to Simulate Blast-Structure Interaction**<sup>1</sup> MIN XU, TAO YANG, MINGJUN WEI, New Mexico State University — High-order WENO schemes have been widely used in numerical simulation of shock/blast waves; and immersed boundary method has been gradually accepted as a simple and powerful approach to deal with moving boundaries in computational fluid dynamics. The combination of these two techniques becomes a natural choice in our study of blast-structure interaction. To benchmark our combined approach, we applied it first on classical shockwave problems with exact solutions or well-tested numerical solutions. Then, the algorithm is applied to simulate the interaction between an incoming blast wave and a spring-linked cylinder. Finally, a more complex case, where multiple plates linked by springs are interacting with blast waves and each other, has been investigated.

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