Head-on interaction of planar shock waves with ideal rigid open-cell porous materials. Analytical model

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An analytical model for predicting the flow field which results immediately after the head-on collision of planar shock waves with ideal rigid porous materials in the vicinity of the porous material/air interface was developed. In addition, a simplified empirical method for readily estimating the enhanced pressure peak at the shock-tube end-wall is proposed. The predictions of the proposed analytical and empirical models were compared to experimental results. The agreement was found to be good to excellent.

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