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Interaction of Supersonic Flows in an Ejector

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The article deals with experimental, theoretical and numerical study of the interaction of supersonic flows on the trailing edge of the primary flow nozzle of a supersonic ejector. The mechanism of mutual deflection of supersonic flows is explained. The results of the interaction are two shock waves or one shock wave and one Prandt-Meyer expansion. A shear layer and a wake occur downstream the trailing edge. The influences of back pressure ratio and stagnation pressure ratio on the interaction are presented. Recommendations for design and for operation of supersonic ejectors are formulated.

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