



## Study on Collision Processes of Opposing Unsteady Supersonic Jets and Shock Waves

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**Abstract.** Opposing unsteady supersonic Si and Ge jets are suddenly injected from two nozzles in low-pressure background gas and collide with each other. Shock waves are formed in front of the jets. In this study, we calculated the flow of jets to clarify the effect collision with opposing shock wave by solving the two-dimensional axisymmetric compressible Euler equation. Ar was used as the background gases. We confirmed that the behavior of the jets after the collision with shock waves depends on the background gas pressure. The flow of jets in Ar gas is as follows. Jets collide with each other at gas pressure 200Pa. While, Si jet is forced back at 300Pa, and two jets are forced back at 500Pa. In previous research, the behavior in the He background gas is quantity similar to that in Ar background gas. However, higher background gas pressure is necessary for He gas to show similar behavior.