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# Experimental Study of a Supersonic Mixing Layer with an Estimation of Acoustic Radiation

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The study of turbulent compressible flow is the object of a particular interest in this last decade. The striking attract is that many phenomena become very important with the effect of compressibility. Indeed, the structure of turbulence changes drastically and depends essentially on the convective Mach number Mc, i.e. the Mach number based on the velocity difference between the large eddies and the external flows. One flow where the effect of compressibility on turbulence appears at relatively low Mach number is the plane mixing layer. The study of a supersonic mixing layer on self preservation was investigated in paper. In order to accomplish these investigation we have got a large test section in a wind tunnel. The setup of an isobaric mixing layer was obtained by a judicious downstream conditions in the diffuser. The mean field profiles were measured and correspond to similarity solutions. The estimation of the acoustic radiation shows that this term is insignificant against the production of turbulence.

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