

ジェット噴流と極超音速流れの干渉現象の解明

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Experimental and CFD Investigation of Multiple jets interaction in the Hypersonic Aircraft

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Research Theme: -

The multiple jet interaction has been sufficiently studied in both the subsonic and the supersonic flow regimes; we cannot find as much studies at the Hypersonic regime, although such topic has critical importance; taking into consideration that the exhaust flow of the Hypersonic aircraft experience a significant expansion in the aircraft aft-body, and when we have two or more jets expanding at the aft of the aircraft such interaction between them will properly go to strongly affect the performance of the aircraft. The study of single jet come as a first step for a multiple jet study; the single jet experiment performed in the University of Tokyo Hypersonic flow wind tunnel, to inject a cold high pressure (1.0 to 5.0 times the outside test section atmospheric pressure) flow of air in the experimental model seen in Figure 1 and Figure 2.

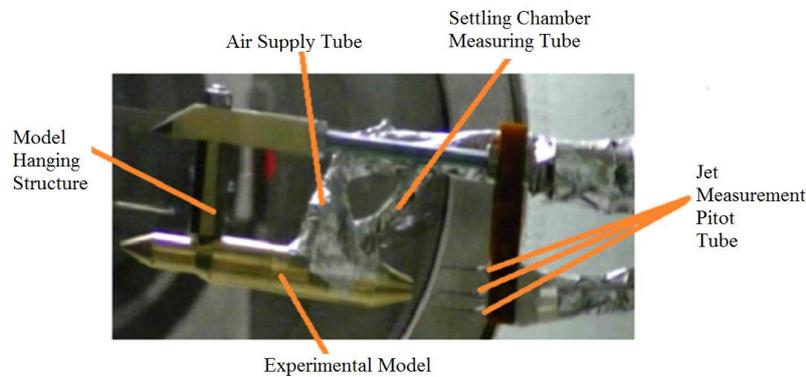


Fig. 1 Test Section Experimental Setup

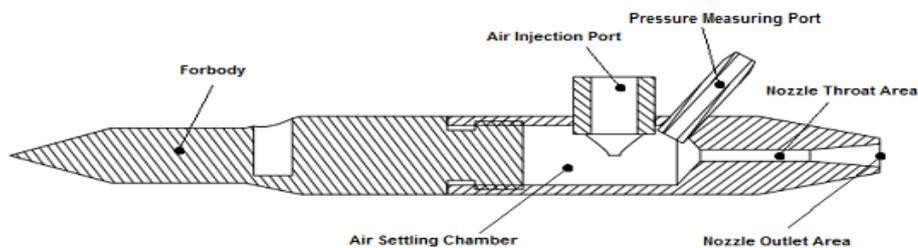


Fig. 2 Experiment Model