

## Synthetic Jet Actuation at the Resonance Frequency

Zdenek Travnicek<sup>(1)</sup>, Frantisek Marsik<sup>(1)</sup>, Tomas Vit<sup>(2)</sup>, Pieter de Boer<sup>(3)</sup>

(1) *Institute of Thermomechanics, Academy of Sciences of the Czech Republic, Prague, Czech Republic*

(2) *Technical University of Liberec, Faculty of Mechanical Engineering, Dept. of Power, Czech Republic*

(3) *Technical University of Eindhoven, Dept. of Mech. Eng., Division of Thermo Fluids Engineering, Eindhoven, The Netherlands*

An air round jet was generated by means of a zero-net-mass-flux actuator. Generation (synthesis) of the jet flow was tested experimentally by smoke visualization and hot-wire anemometry, and a satisfactory function was confirmed. The choice of suitable operating frequency was found by means of theoretical as well as experimental approach: the resultant 75 Hz was found near the theoretically derived resonance frequency as well as near the maximum measured time-mean velocity. The hot-wire data were decomposed using the phase-averaged technique. The experiments present a formation of the synthetic jet when fluid puffs travel downstream and the periodic component of the velocity gradually diminishes. The investigated, originally pulsatile jet resembles a conventional jet for the axial distance greater than 20 diameters from the orifice, where the streamwise decay of the centerline time-mean velocity is described by the proportionality with the exponent  $-1.04$ .

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