Synthetic jet modeling for flow control applications

(Article begins on next page)

05 August 2020

Abstract: A numerical model of synthetic jet actuator, suitable for flow control simulations, is presented. The controlled flowfield is simulated by a standard CFD method for compressible RANS equations, while flow inside the actuator is reduced to a one-dimensional piston flow. The nonlinear matching between the two systems ensures conservation of the mass, momentum and energy.