

Abstract

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Time-resolved PIV Investigation on the Unsteadiness of a Low Reynolds Number Confined Impinging Jet

The flow characteristics in a confined slot jet impinging on a flat plate were investigated in low Reynolds number regime by using time-resolved Particle Image Velocimetry technique. The jet Reynolds number was varied from 404 to 1026, where it is presumed that the transient regime exists. We found that the vortical structures in the shear layer are developed with increase of Reynolds number; that the jet becomes steady at the Reynolds number of 404. Vortical structures; their temporal evolution are verified; the results were compared with previous numerical studies.