

Experimental and Theoretical Study of Heated Coanda Jet

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The results of the experimental and analytical study of the effect of temperature and temperature gradient on the stability of the boundary layer of air flow along the curved wall are presented. The transition from laminar to turbulent flow occurs for a certain magnitude of the Reynolds number in the case of plane wall jet as well as curved wall jet. The transition in the case of curved wall jet is well observed owing to the tendency of the laminar flow to separate from the wall. On the other hand the turbulent flow has a strong tendency to remain attached to the surface. The results of the experiments together with the analysis carried out on the basis of the similarity solution show the stabilizing effect of the heated wall on the boundary layer.

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