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INVESTIGATION OF AERODYNAMIC HEATING FOR THE STRUCTURE GAPS

Abstract

In order to realize the flow characteristics and thermal environment in hypersonic speed flow of reentry vehicle, the experiment of heat transfer measurement for gaps was performed at the nominal Mach number of 9. Tests for gaps were conducted under the laminar and turbulent flow, and the heat transfer distribution inside the gaps was obtained. In this paper, typical heating distributions on the gap were presented. The effects of attack angle, the oblique angle, Reynolds number and the size of gaps were also analyzed primarily.