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TEMPERATURE SIMULATION TEST OF MTPS IN ARC TUNNEL

Abstract

This paper reports the results of temperature simulation test conducted in FD15 arc tunnel of China Academy of Aerospace Aerodynamics (CAAA) for the development of Metallic Thermal Protection System(MTPS). The test facility included 25 MW arc heater, mixing chamber, trajectory simulation and vacuum system etc. The rectangular supersonic nozzle with Mach number 4.3 was used in tests. The aero-heating conditions of the MTPS were simulated with flow field parameters of 750s. The results show that MTPS has well high temperature performance, the back temperature responses are attained in test and models have no breakage during the tests.