The High Enthalpy Shock Tunnel Göttingen of the German Aerospace Center (DLR)

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Abstract

The High Enthalpy Shock Tunnel Göttingen (HEG) of the German Aerospace Center (DLR) is one of the major European hypersonic test facilities. It was commissioned for use in 1991 and was utilized since then extensively in a large number of national and international space and hypersonic flight projects. Originally, the facility was designed for the investigation of the influence of high temperature effects such as chemical and thermal relaxation on the aerothermodynamics of entry or re-entry space vehicles. Over the last years its range of operating conditions was subsequently extended. In this framework the main emphasis was to generate test conditions which allow investigating the flow past hypersonic flight configuration from low altitude Mach 6 up to Mach 10 in approximately 33 km altitude. The studies performed in HEG focused on the external as well as internal aerodynamics including combustion of hydrogen in supersonic combustion and the investigation of transition from laminar to turbulent hypersonic flow.

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References


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