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~~CO-EFFICIENT ISO-MACH CONTOURS~~

Abstract :

The stator and rotor blade hub sections designed for a high pressure turbine stage were studied in detail for their aerodynamic and heat transfer characteristics. The profile sections were tested in the National Aeronautical Laboratory Cascade Tunnels over a range of exit flow Mach numbers. The flow field and heat transfer characteristics of the cascades were also analysed by the Euler code based on Denton's method and the boundary layer code incorporating K- ϵ turbulence model. The results indicated that there was a scope for improving the blade profile sections for high Mach number applications.