Title: THEORETICAL PREDICTIONS OF FLOW DISTRIBUTION IN CASCADES OF HP TURBINE BLADE HUB SECTION

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Abstract:

THE STATOR AND ROTOR BLADE HUB SECTIONS DESIGNED FOR A HIGH PRESSURE TURBINE STAGE WERE STUDIED IN DETAIL FOR THEIR AERODYNAMIC CHARACTERISTICS. THE PROFILE SECTIONS WERE TESTED IN THE NATIONAL AERONAUTICAL LABORATORY CASCADE TUNNEL OVER A RANGE OF EXIT FLOW MACH NUMBERS. THE FLOW FIELD CHARACTERISTICS OF THE CASCADES WERE ANALYSED BY THE EULER CODE BASED ON DENTON'S METHOD. THE RESULTS INDICATED THAT THERE IS A SCOPE FOR IMPROVING THE BLADE PROFILE SECTIONS FOR HIGH MACH NUMBER APPLICATIONS.