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Contents Session A.Turbomachinery,Internal Flow and Acoustics The Numerical Simulation of Sand Trajectory in Fan Air Flow Channel of Turbo-fan Engine Effects of Adverse Pressure Gradient on the Maximum Values of Reynolds Stresses in a Turbulent Boundary Layer MA Wei,Ottavy Xavier,LU Li-peng,Leboeuf Francis (24) Prediction and Analysis of Distortion Inlet on Compressor Performance and Stability Using Three Dimensional Model Numerical Investigations on the Leakage Flow and Rotordynamic Characteristics of Labyrinth Seal Study of Small Flow Rate High Pressure Ratio Backswept Impeller Design A Model for Concentrated Vortices and an Unsteady Wake Model for Turbine Study on Counter-Flow Thrust Vecotring Nozzle Jet Attachment and Control Numerical Study of Cascade Self Noise The Influence of Axial Turbine Element Stage Stator/Rotor Axial Spacing on Flow Status and Performance Experimental Investigation of Novel Casing Treatment with Bias Flow Application and Optimization of Non-Axisymmetric End Wall in a High Pressure Turbine Minimizing Secondary Flow Losses in a High Pressure Turbine with Nonaxisymmetric Endwall Theoretical and Numerical Investigation of the Hydrodynamic Stability of the Planar Taylor-Culick Flow Experimental Investigation of Axial Velocity Density Ratio in Large Camber Compressor Cascade Optimization of Multi-Stage Axial Compressor Based on Stochastic Ranking Differential Evolution Algorithm PIV Investigation of Secondary Flows in a Low-Speed Axial Compressor Rotor Passage Performance Improvement of a Degraded Heavy Duty Gas Turbine Using CFD Design Tools Research of Coaxial Gas Ejector Numerical Research of the Best Depth and Location of the Circumferential Groove of Subsonic Numerical Simulation of Turbine Performance with Low Reynolds Number at High Altitude Numerical Simulation of Three-Dimensional Separated Flow in a Linear Compressor Cascade A Numerical Study of Active Flow Control for Low Pressure Turbine Blades Influence of Turbulence Modeling on the Secondary Flow Predicition 2D Euler-Based Inverse Method.Development,Verification and Application Session B:Heat and Mass Transfer 20 Years of Experiences f0r the Conjugate Heat Transfer Analysis 0f Convection-cooled Turbine Vanes Industrial Applications of Heat Transfer Enhancement.Review and Problem Heat Tranvafer Augmentation Technol Ogies for Internal Cooling of Turbine Components of Gas Turbine Engines Thermodynamics Characteristic of the Flow and Heat Transfer in Rotating Cavity …… Session C:Multiphase Flows,Reacting Flows and Combustion Session D:Advanced Materials,Structural Strength,Vibration and Reliability Session E:Propulsion Engine Design,Control and Health Management Session F:Other Topics Related to Jet Propulsion and Power Engineering

The turbine researchers are always trying to improve the aerodynamic performance and reduce the losses in turbines. A main source of losses is secondary flow loss. Secondary flows involving cross flow and three-dimensional separation phenomena contribute significantly to a reduction in overall efficiency and secondary losses increase as the aerodynamic duty increases or aspect ratio decreases. In a turbine blade passage, a number of vertical flow features are presented, which are collectively known as the secondary flows. A comprehensive and detailed review of these is given by Sieverding. In the past years, a variety of methods have been developed to reduce secondary flows. One of the most active approaches is non-axisymmetric end-wall profiling, whose application in turbines has been proved to be effective in reducing secondary losses and improving overall efficiency by many turbine researchers. During the past decades, emerging computational fluid dynamics (CFD) capabilities have made it possible to design more complex three dimensional non-axisymmetric end walls. Nonaxisymmetric end-wall profiling using such capabilities was initially proposed by Rose. His study was aimed at controlling and equalizing the end-wall static pressure field at the platform of trailing edge, in order to reduce the turbine disk coolant leakage flow. Later Hartland et al. and Ingram et al. investigated non-axisymmetric end-wall profiling in the Durham linear cascade and showed that significant reduction of secondary losses was achievable. Brennan et al. and Rose et al. demonstrated an increase in stage efficiency of 0.4 from computations and 0.59± 0.25% from measurements. Duden et al. and Eymann et al. investigated the combined effects of end-wall contouring and airfoil profiling.

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