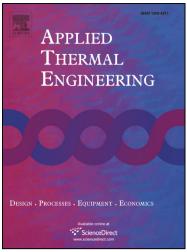
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ACCEPTED MANUSCRIPT

Heat Transfer and Turbulent Flow Charactersitics over Pocket Cavity in the Junction Part of an Outlet Guide Vane in a Gas Turbine

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Abstract:

A pocket cavity is generated when the Low Pressure Turbine (LPT) is connected to the Outlet Guide Vane (OGV) in the rear part of a gas turbine engine due to the different conjugate diameters. This kind of pocket cavities, due to the high Reynolds number and the specific shapes, are hardly investigated in previous researches. The heat transfer distribution and fluid flow over the pocket cavity have significant effects on the incoming flow of the OGV in the downstream distribution. In the present work, the specified triangular pocket cavities are built in a high aspect ratio channel and heat transfer and fluid flow over the pocket surface are investigated experimentally and numerically. These pocket cavities are built with different radii to find out optimized heat transfer distributions and flow patterns. Liquid Crystal Thermography (LCT) is employed to measure heat transfer over the pocket surfaces Download English Version:

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