

HEAT TRANSFER MEASUREMENTS IN A ROTATING TWO-PASS SQUARE CHANNEL

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Abstract

The aim of the present work is to perform local measurements of the heat transfer coefficient distribution nearby a 180deg sharp turn in a rotating square channel, in order to study the efficiency of the modern gas turbine internal cooling systems. These measurements are achieved by means of infrared (IR) thermography. Results are reported either in local form or as averaged, across the channel, Nusselt number profiles along the channel. The results show a different behaviour of the heat transfer with regard to the static channel and the leading and trailing walls of the rotating channel.

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