عنوان مقاله:

The fluid dynamics and heat transfer of forced flow in a rotor-stator cavity

محل انتشار:

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خلاصه مقاله:

۰۸:۵۹:۳۲This paper describes a numerical investigation of fluid flow and heat transfer in a rotor-stator cavity, by simulating a simplified geometry with ANSYS CFX ۱۶.۰. Simulations have been done to verify the accuracy of existing correlations and compare the results with experimental data. Considering the disagreement between simulations and the available correlations, in heat transfer problem, a new correlation for estimating Nusselt number on rotating disk has been introduced. The new correlation considers nondimensional mass flow rate as an important parameter. As a consequence, the new correlation has better agreement with experimental data and simulations shows that it is valid for a wider range. Simulations also show that available correlations for estimating Nusselt number on stationary disk should be used with more caution

کلمات کلیدی:

Simulation, Heat Transfer, Nusselt Number, Gas Turbine, Rotating Disk,Ingestion