عنوان مقاله:

Forced convective heat transfer of turbulence flow over forward facing step

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خلاصه مقاله:

To calculate complex turbulent flows with heat transfer, we have developed a numerical procedure to solve the governing equations based on the orthogonal grids generation by the Schwarz-Christofell transformation. In the present work, the turbulent fluid flow over a single forward facing step is studied to examine the effects of step length and its inclination angle on flow and heat transfer distributions. The continuity, Navier-Stokes and energy equations are solved numerically when the k-ε model is employed for computation of turbulence fluctuations. Because of the complex flow geometry, the governing equations are transformed in the computational domain and the descretized forms of these equations are obtained with finite volume approach and solved by the SIMPLE Algorithm. The present results reveal that the coefficient of heat transfer and also the hydrodynamic behavior of the flow are strongly dependent to step length and its inclined angle.

کلمات کلیدی:

turbulent forced convective, forward facing step, Schwarz-Christoffle transformation

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