

عنوان مقاله:

CFD model for turbulent and laminar boundary layer momentum and heat transfer on a flat plate

محل انتشار:

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نویسندگان:

Ghiasi - PhD Student of mechanical engineering, Tarbiat Modares University

Azimi - PhD Student of chemical engineering, Tarbiat Modares University

Pahlevanzade - Associate Professor, chemical engineering, Tarbiat Modares University

خلاصه مقاله:

A CFD k-e model is presented for turbulent momentum and heat transfer on a flat plate. The layer is simulated for both compressible and incompressible flow. Momentum and heat boundary layer thickness, velocity and heat profile are compared for turbulent and laminar flow. The equations are solved by Finite Volume technique in a Cartesian frame using non-uniform grid in the vicinity of viscous sub-layer. Also a fine grid size was chosen to have less CPU time. In this research we showed that the boundary layer thickness and friction factor is grater in compressible flow. The results are in good agreement with other proposed empirical equations and also Prandtl & Blasius Theory

کلمات کلیدی:

Turbulent boundary layer, Momentum and heat transfer, Compressible flow, Flat plate, k-e model

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