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绕壁面小障碍物的湍流边界层研究

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摘要 采用RNGK－ε模型，对统平板壁面上的条柱、方柱等多种不同形状二维小障碍物的固壁剪切湍流进行数值研究，获得了小障碍物下游回流区及其发展区的时均速度场、回流分离点长度和湍流边界层厚度，计算结果与实验比较吻合良好．结果表明，小障碍物在壁面上的设置，明显地改变了平板壁面边界层的湍流形态和结构．

关键词 壁面障碍物绕流 ANGK－ε模型 湍流边界层

分类号

TURBULENT BOUNDARY LAER STUDY OF FLOW BEHINDSMALL OBSTACLES PLACED ON THE WALL

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Abstract

The solid wall turbulent shear flow behind two-dimensional small obstacles placed onthe plane is numerically simulated using RNG K-ε model and standard K-ε model. The model ofsmall obstacles used in this study have nine types, such as plate, square and cylinder et al. A finitevolume method with the collocated variable arrangement employing orthogonal grids was used tosolve the equation system. The pressure and mean velocity, turbulent energy, dissipation rate ofturbulent energy are coupled by SIMPLE algori...

Key words flow behind obstacles placed on the wall RNG K-ε model turbulent boundary layer

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