Three-dimensional numerical simulation of the flow past a circular cylinder based on LES method(PDF)

摘要：

The hydrodynamic characteristics of a rigid, single, circular cylinder in a three dimensional, incompressible, uniform cross flow were calculated using the large-eddy simulation method of CFX5. Solutions to the three dimensional N-S equations were obtained by the finite volume method. The focus of this numerical simulation was to research the characteristics of pressure distribution (drag and lift forces) and vortex tubes at high Reynolds numbers. The results of the calculations showed that the forces at every section in the spanwise direction of the cylinder were symmetrical about the middle section and smaller than the forces calculated in two dimensional cases. Moreover, the flow around the cylinder obviously presents three dimensional characteristics.

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