

Grid convergence study in the resistance calculation of a trimaran

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摘要: As a new type of hull form, trimaran has remarkable excellent performances and has drawn more and more attention. When the viscous CFD technology now available is applied to the research of resistance performance of trimaran, the spatial discretization would usually result in the grid error and uncertainty, and thus the considerable discrepancy between the numerical results and the experimental data. In order to ascertain how much the grid would affect the calculation, the grid convergence should be studied. A mathematical trimaran was chosen as an example, with the commercial code CFX for the simulation, VOF for surface treatment, and the grid study was carried out based on two different turbulence models. It was concluded that carrying out grid study is helpful in estimating the grid error and uncertainty, and indicating the direction of improving the credibility of the numerical calculation, and, in addition to grid errors and uncertainties, the turbulence modeling errors and uncertainties contribute to the simulation errors.

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备注/Memo: -

