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自适应直角坐标网格方法在耦合传热数值模拟中的应用

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The Application of Auto-adaptive Cartesian Grid Approach on Numerical Simulating Conjugated Heat Transfer

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摘要

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摘要 首先介绍了耦合传热计算区别于一般的导热和对流换热过程的特点,然后介绍了常用的计算方法应用于耦合传热计算遇到的困难及自适应直角坐标网格方法在耦合传热计算中的优势。最后用两个算例证明了采用自适应直角坐标网格方法数值模拟耦合传热问题是适用的。

关键词: 自适应 直角坐标网格 耦合传热 数值模拟

Abstract: The need for numerical simulating conjugated heat transfer with complex intra-face is recognized. Because of the complex intra-face, the normal approaches have difficulties in solving such problems. An auto-adaptive Cartesian grid method approach to tackle the complex intra-face is developed. An auto-adaptive Cartesian grid generator and 3D viscous convection flow solver have been developed and applied to solve two flow problems.

Keywords: auto-adaptive Cartesian grid conjugated heat transfer numerical simulation

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