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论文

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### 跨音速压气机叶栅流动有粘-无粘相互作用的迭代计算

饶江, 吴文权, 华耀南

中国科学院工程热物理所

#### VISCOUS-INVISCID ITERATIVE COMPUTATION IN TRANSONIC COMPRESSOR CASCADE FLOW

Rao Jiang, Wu Wenquan, Hua Yaonan

Institute of Engineering Thermo physics

摘要

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**摘要** 本文利用较为先进的附面层内法向速度分布等半经验相关式,发展了一种适用于大逆压梯度的附面层积分方法。将激波近似地用大逆压梯度代替,对湍流附面层进行了快速计算,再将求得的附面层参数与无粘主流计算通过建立适当的数学模型结合起来,反复迭代后将计算结果与实验数据及无粘计算的结果比较,可以看出有粘-无粘迭代对无粘计算结果有明显改进。

**关键词:** 叶栅 压气机 跨音速

**Abstract:** Using a given velocity profile in boundary layer and the semi-empirical formulas, the integral method to predict boundary layer with adverse pressure gradient caused by shock wave was developed in this paper. The flow field with shock wave in the transonic compressor cascade can be predicted by using of viscous-inviscid iteration procedure. The comparison between the experimental data and the results obtained by means of present method shows that the viscous-inviscid iteration method gives more resonable results than that of inviscid computation.

**Keywords:** cascade compressors transonic

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