论文

最新目录 ｜下期目录 ｜过刊浏览 ｜高级检索

## 有限体积时间推进法在跨音速扩压器湍流流场中的应用

张书城, 黄熙君

北京航空航天大学2所,北京航空航天大学2所 北京 100083 ,北京 100083

## A TIME MARCHING METHOD IN FINITE VOLUME FOR TRANSONIC DIFFUSER TURBULENT FLOWS

Zhang Shu-cheng, Huang Xi-jun

Second Institute of Beijing University of Aeronautics and Astronautics, Beijing, 100083

| 摘要 | 参考文献 | 相关文章 |
| --- | --- | --- |

Download: PDF (323KB)    HTML 0KB   Export: BibTeX or EndNote (RIS)    Supporting Info

摘要 本文提出了一种有限体积时间推进法,将其应用于均化N-S方程的求解,模拟跨音扩压器的湍流流场,并采用空间变时间步长和多重网格技术加快收敛速度。计算结果与有关文献的实验数据吻合良好。

关键词： 进气道　跨音扩压器　数值模拟

Abstract： A time marching method in finite volume is presented and applied to time dependent, Reynolds averaged Navier-Stokes equations for transonic diffuser turbulentflows. A two-layers algebraic turbulent model, proposed by Baldwin-Lomax is used for the eddy viscosity function μT. An explicit, two steps time marching method is presented. In the predicting step downwind difference is used in the streamwise direction and central difference in the transverse direction. In the correcting step upwind difference in the streamwise direction and central difference in the transverse direction are applied. The method is first order in time and second order in space. An artificial viscosity or smooth factors are needed to inhibit the numerical oscillation. The uneven time steps and multi-grid techniques are used to accelerate the convergence. The results of the calcalation are in good agreement with experiments.

Keywords： inlet　transonic diffuser　numerical simulation

Service

▸ 把本文推荐给朋友
▸ 加入我的书架
▸ 加入引用管理器
▸ Email Alert
▸ RSS

作者相关文章

▸ 张书城
▸ 黄熙君

引用本文:

张书城;黄熙君. 有限体积时间推进法在跨音速扩压器湍流流场中的应用[J]. 航空学报, 1992, 13(1): 42-47.

Zhang Shu-cheng;Huang Xi-jun. A TIME MARCHING METHOD IN FINITE VOLUME FOR TRANSONIC DIFFUSER TURBULENT FLOWS[J]. Acta Aeronautica et Astronautica Sinica, 1992, 13(1): 42-47.