



航空学报 » 2000, Vol. 21 » Issue (5) :439-441 DOI:

论文

最新目录 | 下期目录 | 过刊浏览 | 高级检索

<< Previous Articles | Next Articles >>

运动激波自适应网格算法中权函数问题的研究

康红文, 王鹏云

中国气象科学研究院 北京 100081

STUDY ON WEIGHT FUNCTION OF ADAPTIVE GRID TECHNIQUE APPLIED TO MOVING SHOCK PROBLEMS

KANG Hong-wen, WANG Peng-yun

Chinese Academy of Meteorological Science, Beijing 100081, China

摘要

参考文献

相关文章

Download: PDF (239KB) HTML OKB Export: BibTeX or EndNote (RIS) Supporting Info

摘要 变分原理的自适应网格技术被应用到运动激波问题的求解上,在解的大梯度区自动加密网格,从而非常成功地算出了激波。通过分析发现权函数选择和取值对自适应网格技术至关重要

关键词: 自适应网格 权函数 激波

Abstract: Adaptive grid techniques through a variational approach are applied to moving shock problems with exact solutions. Two kinds of weight functions are first tested. One only considering solution gradient can concentrate more grid points in the center of the shock wave, while the other using the second derivative term can distribute more grid points on both ends of the shock wave, where many oscillations are easily produced. So, the weight function with the second derivative term included is more effective to capture the shock wave. The history of the grid points position shows that more grid points are redistributed in the shock regions and can tightly trace the moving shock wave in response to numerical solution; thus the shock wave can be captured successfully. Compared to the numerical solution by using fixed grids, the results show that the adaptive grid techniques have excellent qualities in improving accuracy of the numerical solution and reducing CPU time.

Keywords: adaptive grid techniques weight function shock

Received 1999-06-15; published 2000-10-25

引用本文:

康红文;王鹏云. 运动激波自适应网格算法中权函数问题的研究[J]. 航空学报, 2000, 21(5): 439-441.

KANG Hong-wen;WANG Peng-yun. STUDY ON WEIGHT FUNCTION OF ADAPTIVE GRID TECHNIQUE APPLIED TO MOVING SHOCK PROBLEMS[J]. Acta Aeronautica et Astronautica Sinica, 2000, 21(5): 439-441.

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

- ▶ 康红文
- ▶ 王鹏云