



航空学报 » 1998, Vol. 19 » Issue (6) :2-7 DOI:

论文

[最新目录](#) | [下期目录](#) | [过刊浏览](#) | [高级检索](#)

[<<](#) | [后一篇 >>](#)

## 翼型外形高气动效率/低可探测性的优化

朱自强, 朱一琨, 李海明

北京航空航天大学流体力学研究所, 北京, 100083

### AIRFOIL SHAPE OPTIMIZATION FOR HIGH AERODYNAMIC EFFICIENCY/LOW OBSERVABILITY

Zhu Ziqiang, Zhu Yikun, Li Haiming

Institute of Fluid Mechanics, Beijing University of Aeronautics and Astronautics, Beijing, 100083

摘要

参考文献

相关文章

Download: [PDF \(279KB\)](#) [HTML](#) 0KB Export: [BibTeX](#) or [EndNote \(RIS\)](#) [Supporting Info](#)

摘要 采用 van Leer 矢量通量分裂格式求解 Euler 方程的方法计算了绕翼型的气动特性; 采用矢量通量分裂方法计算了绕翼型的时域电磁散射场特性及雷达散射截面积 (RCS); 采用一种简单而有效的数值优化方法对流场解和电磁场解进行了翼型外形高气动效率/低可探测性的优化计算。算例结果表明, 本方法提供了一种对翼型既可作气动优化设计亦可进行多学科综合设计的有效工具。

关键词: 数值优化 Euler 方程 Maxwell 方程 气动/隐形综合设计

Abstract: van Leer's splitting scheme is used to solve the Euler equations to obtain the aerodynamic characteristics. The vector flux splitting scheme is used to calculate the time domain electromagnetic scattered characteristics. Radar cross section (RCS) is then evaluated with the equivalence principle and Fast Fourier Transformation. Two obtained solutions are coupled with a simple effective numerical optimization algorithm to obtain high aerodynamic efficiency and low observability of the airfoil. Numerical results show that the present method is an effective and robust tool for designing or revising airfoils, as well as for multi disciplinary optimization.

Keywords: numerical optimization Euler equations of motion Maxwell equation multi-disciplinary optimization

Received 1998-06-21; published 1998-12-25

引用本文:

朱自强;朱一琨;李海明. 翼型外形高气动效率/低可探测性的优化[J]. 航空学报, 1998, 19(6): 2-7.

Zhu Ziqiang; Zhu Yikun; Li Haiming. AIRFOIL SHAPE OPTIMIZATION FOR HIGH AERODYNAMIC EFFICIENCY/LOW OBSERVABILITY[J]. Acta Aeronautica et Astronautica Sinica, 1998, 19(6): 2-7.

#### 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

- ▶ 朱自强
- ▶ 朱一琨
- ▶ 李海明