

[1]孙钟阜,郑 健,薛海峰.固体火箭发动机燃气导流片导转特性分析研究[J].弹箭与制导学报,2012,6:109-111.

SUN Zhongfu,ZHENG Jian,XUE Haifeng.The Research on the Guide Characteristics of SolidRocket Motor Gas Deflector Plate[J].,2012,6:109-111.

点击

复制

固体火箭发动机燃气导流片导转特性分析研究

❖ 导航/NAVIGATE

[本期目录/Table of Contents](#)

[下一篇/Next Article](#)

[上一篇/Previous Article](#)

❖ 工具/TOOLS

[引用本文的文章/References](#)

[下载 PDF/Download PDF\(828KB\)](#)

[立即打印本文/Print Now](#)

[推荐给朋友/Recommend](#)

❖ 统计/STATISTICS

[摘要浏览/Viewed](#)

[全文下载/Downloads](#) 82

[评论/Comments](#) 27

[RSS](#) [XML](#)

《弹箭与制导学报》 [ISSN:1673-9728/CN:61-1234/TJ] 期数: 2012年第6期 页码: 109-111 栏目: 火箭技术 出版日期: 2012-12-25

Title: The Research on the Guide Characteristics of Solid Rocket Motor Gas Deflector Plate

作者: [孙钟阜¹](#); [郑 健²](#); [薛海峰²](#)

1 海军驻上海地区水声导航军代室,上海 201108;

2 南京理工大学机械工程学院,南京 210094

Author(s): [SUN Zhongfu¹](#); [ZHENG Jian²](#); [XUE Haifeng²](#)

1 Naval Underwater Acoustic Navigation Military Representative Office in Shanghai Area,Shanghai 201108, China;

2 School of Mechanical Engineering, Nanjing University of Science and Technology,Nanjing 210094, China

关键词: [固体火箭发动机](#); [导流片](#); [燃气](#); [转速](#); [导转力矩](#)

Keywords: [solid rocket motor](#); [deflector plate](#); [gas](#); [rotating velocity](#); [steering moment](#)

分类号: V435

DOI: -

文献标识码: A

摘要: 在固体火箭发动机喷管内采用燃气导流片技术,可以使火箭绕其纵轴旋转。文中建立了喷管内燃气导流片流场数值分析的数学和物理模型,通过数值仿真分析了导流片产生导转力矩的原因及其结构参数对火箭导转特性的影响,并采用高速旋转试验和外弹道飞行测试试验结果与理论计算结果进行比较,结果表明火箭最大转速的理论计算结果和试验结果一致性较好,从而验证了燃气导流片数值模型的可靠性。

Abstract: The gas deflector plate in the solid rocket motor nozzle can make rocket rotate around its vertical axis. The mathematical and physical models of gas deflector plate flow field in the nozzle were established in this paper. The reason of steering moment generated by the deflector and the effect of its structure parameters on rocket guide properties were analyzed using numerical simulation, and the high-speed rotation test and the exterior ballistic test results were compared with the theoretical results. The results show that the calculation results and

experimental ones of the maximum speed of the rocket are in good agreement. The numerical model reliability of the gas deflector plate was verified.

参考文献/REFERENCES

- [1] 王元有,赵伯华,余世方,等. 固体火箭发动机设计[M]. 北京:国防工业出版社,1980.
- [2] 周长省,鞠玉涛,朱福亚,等. 火箭弹设计理论[M]. 北京:北京理工大学出版社,2005.
- [3] 莫展,白涛涛,郭颜红. 带燃气舵的固体火箭发动机尾流仿真[J]. 弹箭与制导学报,2011,31(2):120-122.