

[1]刘欣,李建林,葛健全,等.滑翔式飞行器再入弹道设计[J].弹箭与制导学报,2011,6:161-164.

点击复制

LIU Xin,LI Jianlin,GE Jianquan,et al.Reentry Trajectory Design for Glide reentry Vehicle[J].,2011,6:161-164.

滑翔式飞行器再入弹道设计(PDF)

《弹箭与制导学报》[ISSN:1673-9728/CN:61-1234/TJ] 期数: 2011年第6期 页码: 161-164 栏目: 弹道与气动力技术 出版日期: 2011-12-25

Title: Reentry Trajectory Design for Glide reentry Vehicle

作者: [刘欣](#); [李建林](#); [葛健全](#); [杨涛](#)
国防科学技术大学航天与材料工程学院,长沙410073

Author(s): [LIU Xin](#); [LI Jianlin](#); [GE Jianquan](#); [YANG Tao](#)
College of Aerospace and Material Engineering, NUDT, Changsha 410073, China

关键词: [滑翔式飞行器](#); [弹道设计](#); [弹道跟踪](#); [H-V 剖面](#)

Keywords: [glide vehicle](#); [trajectory design](#); [trajectory tracking](#); [H V flight profile](#)

分类号: V448 235

DOI: -

文献标识码: A

摘要: 针对滑翔式飞行器的弹道特征,提出了一种方案弹道设计方法,将整个再入弹道分为下降段、滑翔段和末制导段,通过简化的控制指令实现下降段和末制导段弹道,并通过“H-V 曲线设计+弹道跟踪”的方法来实现滑翔段的弹道设计,根据侧向运动要求调整侧倾角的变号时机,迭代得到完整的再入基准轨道。最后的算例表明,该方法能快速得到一条针对某一飞行任务的再入弹道。

Abstract: According to the character of reentry trajectory, a trajectory planning methodology was raised in which the reentry trajectory was divided into descent phase, glide phase and terminal phase. In descent phase and terminal phase, constant attack angle was employed. In glide phase, a combination of H-V flight profile design with trajectory tracking was proposed to obtain longitudinal reference trajectory, a “control point” was used to adjust the H-V flight profile, a constant bank angle was used to control lateral motion. The result shows that the trajectory planning methodology is rapid, rational and easy for implementation.

参考文献/REFERENCES

- [1]赵汉元. 飞行器再入动力学和制导[M]. 长沙: 国防科技大学出版社, 1997
- [2]郑总准,谢富强,王永骥. 高超声速飞行器多约束参考轨迹快速规划算法[J]. 计算技术与自动化, 2009,28(1): 88-91
- [3]闫晓东,唐硕. 亚轨道飞行器返回轨道设计方法研究[J]. 宇航学报,2008, 29(2): 467-471
- [4]Shen Zuojun,Lu Ping. On board generation of three dimensional constrained entry trajectories[J]. Journal of Guidance, Control and Dynamics, 2003, 26(1): 110-121
- [5]Shen Z, Lu Ping. On board entry trajectory planning expanded to sub orbital flight, AIAA2003-5736[R]. 2003
- [6]Philips T H. A common aero vehicle (CAV) model, description, and employment guide[R]. Report from Schafer Corporation for AFRL and AFSPC,Jan 2003

备注/Memo: 收稿日期: 2011-02-13 作者简介: 刘欣(1985-),男,湖南邵阳人,博士研究生,研究方向:飞行器总体设计、导弹制导与控制

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\(624KB\)](#)

[立即打印本文/Print Now](#)

统计/STATISTICS

[摘要浏览/Viewed](#)

[全文下载/Downloads](#) 243

[评论/Comments](#) 106

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

