

光电工程

舰载光电系统高精度跟踪控制技术

陆培国,寿少峻

西安应用光学研究所, 西安710065

收稿日期 2005-12-11 修回日期 2006-4-13 网络版发布日期 2006-11-13 接受日期 2006-11-10

摘要 在舰船摇摆条件下提高光电跟踪系统对目标动态跟踪精度,其控制系统设计的关键技术是隔离扰动和减小高速跟踪时的动态滞后误差。对几种陀螺反馈惯性空间稳定技术进行了详细叙述和对比,得到了采用高测量带宽的陀螺反馈回路可以有效提高系统隔离度,并推导出系统隔离度的计算公式。同时,介绍了计算机辅助跟踪技术的原理以及在陀螺反馈惯性稳定技术的基础上结合计算机辅助跟踪的综合控制在舰载光电设备上的应用。以数据说明了这种综合控制技术的有效性和实用性。

关键词 [舰载光电设备](#) [控制技术](#) [计算机辅助跟踪](#) [陀螺仪](#)

分类号 [TP273](#)

High accuracy tracking technology and its application in ship-borne electro-optical system

LU Pei-guo, SHOU Shao-jun

Xi'an Institute of Applied Optics, Xi'an 710065, China

Abstract The critical design for the control system of ship borne electro optical equipment is how to isolate external disturbance and reduce the dynamic lag error. Several kinds of gyroscope inertial stabilization technology are described and their comparison is made. The investigation indicates that gyroscope feedback loop with higher measurement bandwidth can effectively enhance the system's disturbance isolation capability, and the formula for calculating system disturbance isolation capability is derived. The principle of computer auxiliary tracking technology is elaborated. The application of gyroscope stabilization based computer auxiliary tracking in ship borne electro optical system is described. The experimental data are given to prove the validity and effectiveness of this integrated control technology.

Key words [ship borne electro optical system](#) [control technology](#) [computer auxiliary tracking](#) [gyroscope](#)

DOI:

通讯作者 陆培国

扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF\(535KB\)](#)

▶ [\[HTML全文\]\(0KB\)](#)

▶ [参考文献](#)

服务与反馈

▶ [把本文推荐给朋友](#)

▶ [加入我的书架](#)

▶ [加入引用管理器](#)

▶ [复制索引](#)

▶ [Email Alert](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

相关信息

▶ [本刊中 包含“舰载光电设备”的相关文章](#)

▶ 本文作者相关文章

· [陆培国](#)

· [寿少峻](#)