应用光学 2011, 32(1) 75-79 DOI: ISSN: 1002-2082 CN: 61-1171/O4

光学计量与测试

激光驾束制导仪制导过程中信息场参数测量方法研究

于洵[1];宇文乾[1];姜旭[2];李博[1];刘宝元[1]

1.西安工业大学光电工程学院，陕西西安710032；2.西安应用光学研究所,陕西西安710065

摘要：

传统信息场参数测量方式只能测量制导始端和末端的信息场参数，无法测量制导过程中信息场参数,不能全面对制导过程中制导仪性能进行准确评估。为解决传统测量方式存在的问题，采用大口径变焦平行光管与精密光栅尺测控技术实现信息场的制导距离测量，通过专用光纤靶标与PIN阵列探测器接收信息场，根据已建立的数学模型对信号处理，从而得到制导过程中信息场参数。实践验证测量系统的指令测试精度达到0.01单位指令，照度测量精度为5%，光轴一致性精度为4.89″。

关键词： 激光驾束制导 信息场检测 光纤测试 PIN阵列

AInformation filed parameters measurement inlaser beam riding guidance

YU Xun[1];YUWEN -Qian[1]; JIANG Xu[2]; LI Bo[1];LIU Bao-yuan[1]

1.School of Optoelectronic Engineering, Xi'an Technological University, Xi'an 710032, China;2.Xi'an Institute of Applied Optics, Xi'an 710065, China

Abstract:

Since traditional measurement can only measure the parameters of information field at the beginning stage and terminal stage，complete information field parameters during whole guiding process is not available and the missile guidance performance can not be accurately evaluated. To solve this problem, the guiding distance measurement of the information field was realized by using large aperture zooming collimator and precision grating ruler. The information field was detected by optical fiber target and PIN detector array. The signal was processed according to the existing mathematical model and the information field parameters during guiding process were obtained. Results indicate that the test accuracy of command test reaches 0.01 unit command, the accuracy of irradiance measurement reaches 5% and the bore-sight accuracy reaches to 4.89″.

Keywords: laser beam guidance information field testing optical test PIN array

收稿日期 修回日期 网络版发布日期

DOI:

基金项目:

通讯作者: 于洵(1964-)，男，陕西西安人，硕士，高级工程师，硕士生导师，主要从事光电测试技术和光电信息系统与技术的研究与教学工作。

作者简介:

作者Email:

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