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论文

液面基准法标定干涉仪系统误差

武旭华[1],夏江涛[1],肖韶荣[1],陈磊[2]

(1 南京信息工程大学 电信学院,南京 210044)
(2 南京理工大学 电光学院,南京 210094)

摘要：

为消除干涉仪标准参考面的误差,保证其测量准确度,本文采用液面基准法建立光学平面基准对仪器的系统误差进行标定.首先建立弯曲静液面动力学方程从理论上分析润湿效应对液面平面度的影响,并结合实验分析气流、温度、震动等环境因素对液面稳定性的影响,讨论波面稳定性评价指标,给予实验验证.最后用建立的大液面基准对干涉仪系统误差进行标定,给出标定结果.

关键词： 光学测试 液面基准法 干涉仪 标定

Calibration of System Error for Interferometer Through Absolute Liquid Reference Method

WU Xu-hua[1],XIA Jiang-tao[1],XIAO Shao-rong[1],CHEN Lei[2]

(1 College of Electronic and Information Engineering,Nanjing University of information Science |and |Technology,Nanjing 210044,China)
(2 College of Electronic Engineering |and |Optoelectric Technology,Nanjing University of Science |and |Technology,Nanjing 210094,China)

Abstract:

Through absolute liquid reference method,the bend static liquid surface dynamics equation is built for calibrating the system error of interferometer,and theoretical simulation and experimental measurement are carried out for wetting effect on liquid surface.The stability of liquid surface effected by the environment factors such as air current,temperature,vibration,is analyzed,the experiment is taken,and estimate indexes are given.The absolute liquid reference with high-accuracy is set for calibrating interferometer system error under laboratory environment,the results are given,and the measurement accuracy is ensured.

Keywords: Optical testing Absolute liquid reference method Interferometer Calibration

通讯作者: 武旭华

作者简介：

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