

成像光学

## 非球面波像差的检测技术

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**摘要** 介绍了非球面波像差测量的原理和装置。对于柱面检测, 以GPI HS型数字干涉仪为主机实现了移相干涉术的柱面波像差检测。采用绝对检验法对标准柱面镜进行了标定。为了检测抛物面、椭球面和双曲面镜, 在干涉仪工作光路中加入一个标准辅助反射镜, 组成自准直系统, 采用干涉法中的无像差点法实现对非球面波像差的检测。若这种测量方法与移相式数字干涉原理相结合, 测量精度更高, 数据信息量更大, 测量范围更广, 同时还可消除系统误差和调整误差。

**关键词** [非球面检测](#) [波像差](#) [无像差点法](#)

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## Testing technology for aspheric wavefront aberration

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**Abstract** The principle and system of aspheric wavefront aberration measurement are introduced. The cylindrical wavefront aberration measurement was realized mainly by GPI HS interferometer with the phase shift interferometry. The cylindrical standard mirror was calibrated by the aid of the absolute testing method. A standard accessorial reflecting mirror was incorporated into the beam path of an interferometer to build up a auto collimating system for measuring the aspheric wavefront aberration of paraboloidal, ellipsoidal and hyperbolic mirrors with the method of aberrationless point. This method will have the characteristics of higher precision, bigger data information capacity, larger measurement range, and can remove system error and adjustment error if it is combined with the phase shift interference principle.

**Key words** [aspheric measurement](#) [wavefront aberration](#) [aberrationless method](#)

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