

激光技术

一种新型激光目标模拟光源

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摘要 简述了激光接收系统性能测量中所用激光光源的现状和存在的问题, 提出了一种新型激光目标模拟光源。该光源主要利用单模光纤输出模式为横向高斯分布, 即激光能量密度空间横向分布为高斯分布, 并以一固定束散角沿轴向传输的性质及空间滤波实现激光目标回波模拟。该方法从原理上解决了微峰值功率密度条件下复现目标模拟激光光场分布的均匀性和小束散角问题, 并在激光波长、脉冲宽度上与检测接收系统的实际工作波长、脉冲宽度一致。研制的检测系统已用于激光测距机的质量控制。

关键词 [激光接收系统](#) [目标模拟光源](#) [光纤束](#)

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A novel laser source for target simulation

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Abstract The situation and the problems of the laser source used nowadays for measuring the performance of laser receivers are presented, and a novel laser source for target simulation based on a bunch of single mode fibers which produces a laser field transmitted in Gauss distribution with settled divergence is proposed. The problems of uniformity and small divergence for reconstructing the light field distribution of target simulating laser under the condition of micro peak power density was solved with this method theoretically. The testing result of the target simulation laser consists with the actual working wavelength and width of the receiving system. The detection system developed by us has been used for quality control of laser range finders.

Key words [laser receiver](#) [target simulation source](#) [fiber bundle](#)

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