

光纤传感和光通信

铒纤长度对单程掺铒光源输出特性的影响

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摘要:

分析铒纤长度对掺铒光源输出特性的影响对于光源的优化设计有重要意义。实验分析了铒纤长度对单程前向和后向掺铒光纤光源(SFS)输出特性的影响。分析了铒纤长度与单程SFS输出光功率的关系, 以及铒纤长度对单程SFS输出光谱宽度及中心波长的影响。找到了最佳铒纤长度的范围, 对单程掺铒光纤光源的器件选择及性能优化有重要的参考价值。

关键词: 光纤陀螺(FOG) 单程掺铒光纤光源(SP SFS) 中心波长 谱宽

Dependence of SP SFS performance on the length of Erbium-doped fiber

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Abstract:

The dependence of SFS performance on the length erbium-doped fiber is important for the design and optimization of SFS. The experimental investigation on single-pass Erbium-doped superfluorescent fiber source (SP SFS) was presented. The dependence of the center wavelength, spectral line width, and output light power on the Erbium-doped fiber length was measured. It is discovered that, there is an optimal-length of Erbium-doped fiber for SPB SFS. The results of the experiment are significant for the selection of devices and the proper design of Erbium-doped super-fluorescent fiber sources.

Keywords: fiber-optic gyroscope (FOG) single-pass Erbium-doped super-fluorescent fiber source (SP SFS) center wavelength spectrum width

收稿日期 修回日期 网络版发布日期

DOI:

基金项目:

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