

理论研究

一种二维光CDMA地址码的构造及实现方法

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摘要

对光正交码(OOC)的特性和二维地址码的构造方法进行研究,介绍了一种用于OCDMA系统的二维时间/频率组合码的构造方法,分析该地址码的自相关和互相关特性,以及该地址码的实现方法.分析结果表明,由单极性码OOC构造而成的二维时间/频率组合码OOC/OOC不仅具有良好的自相关和互相关特性,而且可以通过采用光纤布拉格光栅编解码器和阵列波导光栅编解码器实现快速、灵活编码.

关键词 [光CDMA](#) [光正交码](#) [二维组合码](#) [光纤布拉格光栅](#) [阵列波导光栅](#)

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Construction of Two-Dimensional OCDMA Address Code and Its Encoder/Decoder

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Abstract

The different categories of CDMA address codes and corresponding characteristics are introduced.The method of constructing a two-dimensional combined address code of time spreading/frequency hopping is given, and the characteristics of constructed address code are analyzed. In the end, the realization method of this address code is illustrated. This new code has good performances in autocorrelation, cross-correlation and capacity, and can be easily implemented by FBG and AWG. The decoder and encoder of two dimensional code are easier in selecting address and integration than those of one dimensional code.

Key words [OCDMA](#) [optical orthogonal code](#) [two dimensional address code](#) [fiber Bragg grating](#) [array wave-guide grating](#)

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