Procedia Engineering, vol. 53, 2013, pages 420-427

New design of Flexible Cross Correlation (FCC) code for SAC-OCDMA system

Abstract

In this paper, we present, several aspects of unipolar optical code-division multiple access (OCDMA) codes, focusing on the flexible inphase cross-correlation code algorithm and its potential for future optical networks. We briefly present a new class of code namely Flexible Cross Correlation (FCC) code for Spectral-Amplitude Coding (SAC) OCDMA approaches. The main coding properties are reviewed. The FCC code provides simple tridiagonal matrix constructions compared to the other SAC-OCDMA codes such as MDW, MQC and MFH codes. This code possesses such a various advantages, including the easier code construction, less complexity of encoder/decoder design and flexible in-phase cross-correlation for uncomplicated to implement using Fiber Bragg Gratings (FBGs) for the OCDMA systems.

Keywords

Code length; Fiber bragg gratings; Flexible Cross Correlation code; Multiple access interference; SAC-OCDMA