Abstract

More and more modern metaheuristics nature–inspired algorithms are emerging and they become increasingly popular. This paper formulates an algorithm for solving the channel–allocation problem in optical wavelength division multiplexing (WDM) systems to suppress four–wave mixing crosstalk (FWM) based on a novel nature–inspired algorithm, called Cuckoo Search algorithm by using the concept of Optimal Golomb ruler (OGR) sequences. Simulation results conclude the significance performance improvement, without the requirement of increased total optical channel bandwidth, unlike two existing classical channel–allocation algorithms i. e. Extended Quadratic Congruence (EQC) and Search Algorithm (SA) and one of the existing nature–inspired algorithm i. e. Genetic Algorithm (GA).


- Galinier, Jaumard, Morales, and Pesant G. 2001. A constraint–Based Approach to the

A Cuckoo Search based WDM Channel Allocation Algorithm

ca/~athens/cs507/Projects/2003/JustinColannino/.
- "Project OGR", http://www.distributed.net/OGR.
- http://mathworld.wolfram.com/PerfectRuler.html

Index Terms
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Keywords
Cuckoo Search algorithm Channel allocation Golomb ruler Wavelength division multiplexing.