

## New code structure for spectral amplitude coding in OCDMA system

### ABSTRACT

A new code structure for spectral amplitude coding optical code division multiple access system based on Double Weight (DW) code families is proposed. The DW code has a fixed weight of two. Modified Double Weight (MDW) code possesses ideal cross-correlation properties and the weight can be any even number, which is greater than two. The MDW code possesses ideal cross-correlation properties and exists for every natural number  $n$ . Using the MDW code compared to the existing codes such as Hadamard and Modified Frequency-Hopping (MFH) codes can provide a much better performance. This has been demonstrated from the experiment simulation.

**Keyword:** OSCDMA; DW code; MDW code