

Optical spectrum CDMA: A new code construction with zero cross correlation for double weight code family

This paper concentrates on Double Weight code family as a proposed code for the optical spectrum code division multiple access (OSCDMA) which has one cross correlation value. By eliminating the intersection columns of this code, the cross correlation value will be zero instead of one. This new derived code is called Zero Cross-Correlation Code (ZCC) [1]. In ZCC code, the performance is expected to be better than MDW code because it offers low cross correlation value. It is easy to distinguish the desired signal from the interfering signal if the cross correlation value is low. Besides, a general new equation is obtained for code which has zero cross correlation value instead of basic matrix and mapping technique which are used in modified double weight code to obtain a specific code word.