**Performance Optimization for 5GWireless Network**

Abstract

Fifth Generation (5th G) wireless network is a challengeable research area. As it is intended to serve growing number of subscribers, and to handle various types of data. Therefore, the need for more number of channels and higher performance is increasing. In this paper, we focus on the adopted modulation scheme (256 QAM), where the signals set have been arranged among the constellation diagram in order to reach minimum Bit Error Rate (BER) using Gradient Search Method [1].Furthermore, permutation loop is applied on the resulting signals set in order to achieve better performance (lower BER).

The results show that acceptable BER under given Signal to Noise Ratio (SNR) could be reached with the relatively large amount of data that is required by this digital modulation scheme.

Keywords: BER, QAM, SNR, AWGN, PERFORMANCE, Gradient, 5th G, WIRELESS.