VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELGAUM-590018

A PROJECT REPORT ON

"HIGH THROUGHPUT, LOW POWER AND LOW RF RADIATION MIMO SYSTEM"

(KSCST SPONSORED)
PROJECT REFERENCE NUMBER: 37S0708
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Abstract:

The mobile data applications has increased the demand for wireless communication systems offering high throughput, wide coverage, and improved reliability. The main challenges in the design of wireless communication systems are the limited resources, such as constrained transmission power, scarce frequency bandwidth, and limited implementation complexity and the impairments of the wireless channels, including noise, interference, and fading effects. Multiple-Input Multiple-Output (MIMO) communication has been shown to be one of the most promising emerging wireless technologies that can efficiently boost the data transmission rate, improve system coverage, and enhance link reliability. By employing multiple antennas at transmitter and receiver sides, MIMO techniques enable a new dimension – the spatial dimension – that can be utilized in different ways to combat the impairments of wireless channels.

This project focuses on Equalization technique(ZF), for Rayleigh Flat fading channel. Equalization is a well known technique for combating Inter-Symbol Interference; moreover equalization is the filtering approach which minimizes the error between actual output and desired output by continuous updating its filter coefficients. In this paper, ZF equalization techniques are investigated for the analysis of BER in 2×2 MIMO Systems for BPSK,QPSK and 16-QAM modulation techniques.