

ABSTRACT

Wireless narrowband system has two important cases, that is eliminate multipath fading and expand the spectrum efficiency. MIMO (Multi-Input Multi-Output) is the solution of this cases, this technique can expand the channel capacity without reducing its bandwidth. In this thesis we investigate channel capacity of MIMO is influence of environments, power distribution, the number of antennas and the space between each antenna elements. Results show that a total capacity of 15,8 b/s/Hz can be achieved in outdoor microcell environment, 15,5 b/s/Hz for using 4x4 antenna configuration and if used 2λ space in each element of antennas achieve capacity 26 b/s/Hz at a SNR of 20dB.

Index terms – MIMO, multipath fading, SNR