Abstract

Multiple Access Interference (MAI) is interference caused by the presence of other users in the cell. Conventional signal detectors detect only single user’s signal. When there are multiple users in the same environment, the conventional detectors treat other users’ signals as noise or interference. MAI affects system capacity and system performance. When there are more users, the MAI is high besides the performance is also affected by the near-far problem. This paper seeks to analyse the Capacity of MIMO WCDMA under various Cell Load factors. With cell loading factor of 6% and signal to noise ratio of 10dB the 4*4 MIMO systems performed better. Besides for a cell load of 50% and a cell range of 1.02km the allowable path loss without MUD was around 98.45dB

References

- Vijay Garg, K., 2002 "Wireless Networks Evolution 2G&3G"; Prentice Hall PTR, New Jersey
- Gao Peng, Tu Guofang, Fang Yuan, Liang Shuangchun 2009. "The analysis of the interference between WCDMA and WIMAX systems"; Communications Technology and Applications, ICCTA &apos;09. IEEE International Conference, pp. 180, Beijing,
- Fuyong Xu, Guangqiu Li, 2005 "Performance analysis of MQAM for MIMO WCDMA systems in fading channels"; Communications, Circuits and Systems International Conference IEEE, vol. 1, pp. 207
- Sergio, V. "Multiuser Detection" The Press Syndicate of the University of Cambridge, Pit Building Trumpington Street, Cambridge, CB2, 1RP, United Kingdom.
- Foerster J. "Channel modeling sub-committee report final"; IEEE 802.15-02/490 (see http://ieee802.org/15/)

Index Terms

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Keywords
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