

FEMTOCELL PATH LOSS AND INTERFERENCE MODELLING IN 4G WIRELESS NETWORKS

**Mohamed Hadi Habaebi
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Femtocells are a promising technology to increase the capacity, efficiency and the coverage of the cellular networks. However, several challenging issues must be addressed and resolved before femtocell technology becomes a reality. One of the most important challenges is assessing, modelling and mitigating the interference. This book reviewed different techniques to mitigate the interference in OFDMA femtocell networks. To predict the SINR accurately, an indoor femtocell path loss model is required. Since most of the available models in the literature are for long range cells. Moreover, to evaluate the indoor path loss models for femtocell networks and to investigate more realistic femtocell deployment scenarios, a 3-D system level simulator is necessary. In this Book, six different models of indoor propagation were studied and compared with measured data. Comprehensive measurements were conducted in a four storey building using most popular frequencies for Long-Term Evolution (LTE) networks of 1.8 and 2.6 GHz. Three different scenarios with different numbers of penetrated walls and floors were considered. The results were analyzed statistically using linear and non-linear regression methods

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