

UNIVERSITI TEKNOLOGI MARA

INTERFERENCE MITIGATION IN DOWNLINK CO-TIER  
NETWORK USING DYNAMIC POWER CONTROL

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## ABSTRACT

Recently femtocells is seem to be the most promising solution to the indoor wireless internet users. However, the extend number of user has led to increase the capacity demand for packet-based mobile broadband system. Furthermore, the future demand foresee that for the cellular services, was predicted that more than 50% of voice calls and more than 70% of data traffic is expected to originate from indoors. Due to the scarcity of the spectrum resources, has contributed femtocells to share spectrum with other networks, which inevitably bring in severe interference. Therefore, this paper is proposing a dynamic power control in order to mitigate the interference level in the downlink co-tier networks in order to achieve the good Quality of Services.

In this paper, the transmission power is setting as a dynamic variable and a non cooperative game is perform to make it works. The purposed of this game is to find a fair trade-off between both Throughput and SINR value in order to find an optimal transmission power for femtocell. Based on the distance between femtocell and the user, this study aims to minimize the power transmit without sacrifice the bitrate while at the mean time be able to reduce the packet loss. Therefore the Quality of Services can be improve.

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