

# The outage probability and interference avoidance of two-tier cell systems

王致淵、陳雍宗

E-mail: 322037@mail.dyu.edu.tw

## ABSTRACT

The thesis is intention in analyzing the evaluation of system performance for an MC-CDMA (multi-carrier coded-division multiple-access) system operating over two-tier femtocell environment. The considered scenario is deployed with a macrocell site where is surrounding some femtocells, which are designed to serve a group of subscribers locate in a small coverage area such as small office, home office or a house. Mostly, the femtocell is applied to serve indoor subscribers, thus, the Rayleigh fading is adopted to characterize the propagation channel between transceiver. The technique of TH-CDMA (time-hopped coded-division multiple-access) is supposed to transmit each symbol alternatively with fair time slot for each user in the hotspots (the area around 0th femtocell). The contribution of the paper is not only to evaluate the system performance with both the BER (bit error rate) according to the most important parameters, for example, the activating user number, the hopping number provided by TH-CDMA system and the subcarrier numbers.

Keywords : time-hopped CDMA(TH-CDMA)、hotspot、femtocell、macrocell、MC-CDMA、Rayleigh fading

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