ABSTRACT
The interference time ratio and multiple access interference from both base stations (BSs) and mobile stations (MSs) are analyzed for TDD/CDMA uplink systems, and the uplink throughput is evaluated according to a required outage probability. Only the path loss and shadowing effect in the mobile radio channel are considered in our investigating, while the effect of multi-path fading is assumed to be compensated by signal processing and channel coding. In regarding to the interference time ratio, we find that the interference time ratio increases as the cell radius increases for the interfering BSs. For the interfering MSs, the interference time ratio increases as the distance between the MS and the interfered BS decreases. In regarding to the capacity loss due to the cell size, for a 50% down-link cell coverage, when the cell radius increases from 100 m to 5,000 m and 10,000 m, the capacity loss is 45.1% and 87% respectively. For a 85% down-link cell, the loss is 37.5% and 93.7% respectively. While for a 95% down-link cell, the loss is 53.8% and 92.3% respectively. We find that the capacity loss increases as the cell radius and the cell coverage increase. Therefore it is a better choice to deploy TDD/CDMA systems in the micro-cells. Because the BSs tend to transmit more power for a higher downlink cell coverage, the associate interference also increased, and the capacity decreases accordingly. As a result, the downlink power control should be used to reduce the BSs transmitted power.

Keywords : TDD/CDMA ; interference time ratio ; outage probability ; capacity ; cell coverage
圖4.1 BS0接收時時序圖
圖4.2 行動台在不同位置不同角度與不同正規化距離的干擾時間比例分佈圖
圖4.4 TDD/CDMA幾何位置圖
圖4.5 行動台在不同位置（不同角度與不同正規化距離）的干擾時間比例分佈（圖為細胞半徑為5000公尺）
圖4.6 在50%涵蓋率，系統設定衰變餘裕β=0dB下，不同細胞半徑下通訊中斷機率與用戶數目的關係
圖4.7 在85%涵蓋率，系統設定衰變餘裕β=8dB下，不同細胞半徑下通訊中斷機率與用戶數目的關係
圖4.8 在95%涵蓋率，系統設定衰變餘裕β=13.2dB下，不同細胞半徑下通訊中斷機率與用戶數目的關係
表目錄 表2.1 在不同環境下的路徑損失指數
表4.1 TDD/CDMA之通訊容量及數據流量（系統設定衰變餘裕β=0dB）
表4.2 TDD/CDMA之通訊容量及數據流量（系統設定衰變餘裕β=8dB）
表4.3 TDD/CDMA之通訊容量及數據流量（系統設定衰變餘裕β=13.2dB）

REFERENCES