

## ABSTRACT

In CDMA system, near far effect is overcome with power control, so that all signal from MS will be received with same power level at BTS. Signal that transmitted have variation in amplitude and phase when it arrived at the receiver (the variation's caused by fading). To reduce the loss caused by fading, power control that can predict the next power level needed to enabled the signal received by receiver, is used.

Power control designed to overcome fast fading is closed loop power control, in which MS power transmission setting perform by BTS. In a power control algorithm, SIR estimator needed to predict user SIR. SIR value is used by power control algorithm to determine whether user will need to increase or decrease its power for the next period. In real condition, there's no ideal SIR estimator, this will produce estimation error. This final task will conduct a test for these adaptive power control algorithm. The test result will represent the influence of SIR estimator error to the power control performance.

Simulation shows that for the 5 km/hour speed, stepsize adaptive algorithm will produce average SIR of 9.239 db at the 10 % error variance. Adaptive algorithm with SIR input and speed of 40 km/hour will produce average SIR of 8.837 db at the 7 % error variance of speed and 10 % error variance of SIR.