A Parametric power control with fast convergence in cellular radio systems

Chae Y. Lee and Taehoon Park

Dept. of Management Science, KAIST, 373-1 Kusung-Dong, Taejon, KOREA

Abstract

With an efficient way of transmitter power control, the capacity of the cellular radio system can be maximized. CIR balancing techniques forcing all the CIRs of cells to converge to a value have been the core of power control algorithms. Since power control problem is inherently a real-time problem, to find the fastest balancing algorithm has been the essential issue.

An efficient power control scheme is developed in this paper. In the scheme, the power control is performed at each base with some parameters provided by the central collector. The computational results shows the convergence of the proposed CIR balancing algorithm is quick and smooth. The CIR balancing algorithm is modified to accelerate the convergence by introducing another parameter. With the CIR balancing algorithm, the CIRs are balanced sufficiently in the power control period and it becomes possible to provide more equalized voice quality to the subscribers.