Abstract

Radio resources in wireless communication systems, implementing different multiple access techniques, must be wisely managed. This perspective is pivotal since the variations in propagation channel are very fast. This complexity in the cellular system periodically contributes to different interference levels, high or low, resulting in the degradation of the system capacity. Transmitter power control is an efficient technique to mitigate the effect of interference under fading conditions, combat the Near-Far problem and conserve the battery life. Thus, an effective implementation of different power control algorithms in cellular radio communication systems can offer a significant improvement in the Quality of Service (QoS) to all the users. Choice of an appropriate power control algorithm is of prime importance, as it should aim at increasing the overall efficiency of the system. In this paper different distributed power control algorithms, each suited for implementation under different cellular technologies, were studied extensively. Specifically, three distributed power control algorithms are compared through simulations on the basis of performance metrics like Carrier to Interference Ratio (CIR) and Outage for the downlink case.
Reference


Index Terms

Electronics

Communication Systems
Key words

CDMA

Centralized Power Control

Decentralized Power Control