

Abstract

CDMA network is well known for its interference limited performance. Minimizing the interference and achieving high throughput along with fairness is still the objective of many research efforts. This paper investigates this issue through exploring the relation between scheduling interval and power assignment on the performance of downlink slotted CDMA networks for different scheduling criteria. The proposed scheduler is a power based scheduler. It shall assign "channels" to contending users based on their power requirements and QoS constraint. The scheduler will choose first the user that requests the minimum power level as far as its maximum delay threshold is not reached and it continues in serving minimum power users until all allocated power or set of codes is exhausted. The scheduler is examined for different scheduling intervals, delay thresholds and different levels of burstiness. We compare through system level simulations of the downlink channel the enhancements provided by the proposed scheme with Power Earliest Deadline First (PEDF). The simulation results show outstanding performance for the proposed algorithm in terms of higher throughput, much lower packet delay and comparable fairness index figures under a wide range of traffic loads.