Hamilton Institute

Call Admission Policies for
DS-CDMA Cellular Networks
Based on Power Control Setpoints

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Abstract

This talk present call admission control algorithms for SIR-based power-controlled DS-CDMA cellular networks. We consider networks that handle both voice and data services. When a new call (or a handoff call) arrives at a base station requesting for admission, our algorithms will calculate the desired power control setpoints for the new call and all existing calls. We will provide necessary and sufficient conditions under which the power control algorithm will have a feasible solution. These conditions are obtained through deriving the inverse of the matrix used in the calculation of power control setpoints.

If there is no feasible solution to power control or if the desired power levels to be received at the base station for some calls are larger than the maximum allowable power limits, the admission request will be rejected.Otherwise, the admission request will be granted. When higher priority is desired for handoff calls, we will allow different thresholds (i.e., different maximum allowable power limits) for new calls and handoff calls. We will develop an adaptive algorithm that adjusts these thresholds in real-time as environment changes. The performance of our algorithms will be shown through computer simulation and compared with existing algorithms.

Venue: Seminar Room, Hamilton Institute, Rye Hall, NUI Maynooth

Time: 1.00 - 2.00pm (followed by tea/coffee)

Travel directions are available at www.hamilton.ie

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