Dynamic Sectorization of microcells for Fiber-optic CDMA Systems

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Abstract

Recently *Fiber-optic Micro-cellular CDMA System* is considered to solve frequent handoffs and local traffic unbalance microcellular systems. In this system, Central Station which is connected to several microcells by optical fiber manages the channels. In this paper, we propose an efficient sectorization algorithm which dynamically clusters the microcells to minimize the blocked and handoff calls and to balance the traffic loads in each cell.

The problem is formulated as an integer linear programming. The objective is to minimize the blocked and handoff calls. To solve this real time sectorization problem the *Tabu Search* is considered. In the tabu search intensification by swap and add move is implemented by short-term memory embodied by two tabu lists. Diversification is considered to investigate proper microcells to change their sectors.

Computational results show that the proposed algorithm is highly effective. The solution is almost near the optimal solution and the computation time of the search is considerably reduced compared to the optimal procedure.

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