

Designing Wireless Networks by Test Point Reduction

Abstract:

The problem of locating the minimum number of Base Stations (BSs) to provide sufficient signal coverage or to satisfy user, is often formulated in manner that results in a mixed-integer NP-Hard (Non-deterministic Polynomial-time Hard) problem. Solving a large size NP-Hard problem is time-prohibitive because search space always increases exponentially. This paper presents a method to reduce a number of Test Points for placing BSs by employing a convolution process. Results show that the size of search space substantially decreases, and converging to the optimal solution can be achieved in a timely-fashion.