An Algorithm for Determining Mobile Station Location Based on Space Segmentation

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References:

Abstract:
An algorithm to determine mobile station location using segmentation of space, taking the set of nearest base stations as the segmentation criterion, is proposed. According to the set of nearest base stations observed by the mobile station, the algorithm selects a precalculated segment where the mobile station is located. By assuming uniform probability density for the mobile station location within the segment, the expectation for the mobile station coordinates is computed. Application of the algorithm is illustrated by simulation of a real GSM network. The algorithm is characterized by low computational cost and traffic burden.

Keywords:
segmentation., GSM, fingerprinting, positioning, Cell identity (Cell-ID), mobile location