

电子技术

一类适用于多小区CDMA系统的互补码集

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摘要:

针对多小区码分多址 (code division multiple access, CDMA) 系统, 构造了一类具有大容量和优异相关性能的多子集互补码集。该码集基于循环移位的完美码集和相互正交的传统互补码集, 可以获得多个互补码子集, 每个子集中码的数目都达到了互补码集的理论界。这些子集内的码具有理想的相关性能, 同时子集之间的码具有近似理想的相关性能。将不同的子集分配给多小区CDMA系统中不同的小区, 既可以满足大容量用户的需要, 也可以有效抑制小区内部和小区之间的干扰。

关键词: 多小区CDMA 互补码 移位完美码 多址干扰 多径干扰

A set of complementary codes for multi-cellular CDMA systems

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Abstract:

A novel multi-subset complementary set with large set size and good correlation properties suitable for multi-cellular code division multiple access (CDMA) systems is constructed. Based on cyclic shifted perfect code sets and traditional mutually orthogonal complementary sets, the designed set can obtain multiple subsets, and the number of complementary codes in each subset comes up to theoretical bounds. The intra-subset complementary codes have ideal correlation properties and the inter-subset complementary codes have approximately ideal correlation properties. When different subsets are assigned to different cells of multi-cellular CDMA systems, the requirements to accommodate more users can be satisfied and the intra-cell and inter-cell interference can be efficiently resisted.

Keywords: multi-cellular CDMA complementary code shifted perfect code multiple access interference multi-path interference

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