

论文

自适应重构天线设计与MIMO系统空域相关性分析

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摘要

紧凑空间移动终端中双圆极化可重构天线由于间距小, 天线间相关性强, 直接影响到系统的信道容量。该文从理论的角度研究可重构天线参数(旋向和轴比)、环境参数(信道交叉极化鉴别率和入射角)与相关性的关系, 该文还研究了如何通过上述参数的调整降低天线相关性, 最后根据理论分析和仿真结果提出自适应重构天线的设计方法, 为在MIMO系统小型移动终端极化可重构天线的设计提供理论参考。

关键词 [无线通信](#) [空域相关系数](#) [极化轴比](#) [极化旋向](#) [交叉极化鉴别率](#) [入射角](#) [自适应重构](#)

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The Analysis of the Spatial Correlation in MIMO System and the Adaptive Reconfiguration Antenna Design

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Abstract

The small spacing between the double circular polarized antennas installed in the small mobile terminal can lead to the strong spatial correlation, which will directly diminish the channel capacity. From the theoretical point, this paper studies the relationship between the spatial correlation and the parameters which include the reconfigurable antenna parameters (such as the polarization rotating direction, the polarization axial ratio) and environment parameters (such as the channel cross polarization discrimination, the arrival angle). This paper also studies how to decrease the spatial correlation by adjusting the above parameters. Based on the analysis and simulation results, the design method of adaptive reconfiguration antenna is presented. The design method proposed in the paper can be used as reference for the design of reconfigurable polarization antenna in the small MIMO mobile terminal.

Key words [Wireless communication](#) [Spatial correlation coefficient](#) [Polarization axial ratio](#) [Polarization rotating direction](#) [Cross polarization discrimination](#) [Arrival angle](#) [Adaptive reconfiguration](#)

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