

Research on Multi-path Clusters Based on Outdoor MIMO Channel Measurement

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Abstract:

This TD investigates the cluster dynamic behaviours in an outdoor propagation environment to facilitate the outdoor channel modelling and simulation. To identify the relevant clusters from measured channel data in joint spatial-temporal domain, an automatic cluster identification algorithm has been employed. By introducing a closed loop scheme and a multi-dimension filter, significant improvements on the algorithm performance can be obtained. Furthermore, based on analysis on the cluster identification results, this TD proposes two stochastic models for cluster time-variant characteristics including cluster lifespan and cluster spatial-temporal evolution. Empirical examples reveal the applicability and accuracy of the models. The main purpose of the researches in this TD is to provide us an insight into the realistic characteristics of the continuous channels, and thus settle the methodology foundation for related simulations.