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基于AR模型的无线衰落信道仿真

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摘 要：提出一种基于自回归(Autoregressive，AR)模型滤波的快速无线衰落信道仿真模型。对白噪声进行滤波，产生Rayleigh无线衰落信道。仿真试验结果表明：该信道具有与实际无线信道基本一致的统计特性，可用于实验室无线系统仿真设计、算法选择与优化。所设计的Rayleigh衰落仿真模型与传统的正弦波叠加SOS方法相比，更满足无线信道的统计规律，具有复杂度低、易于软硬件实现的优点。

关键字：信道模型；Rayleigh衰落；正弦波；AR模型

Simulation of wireless fading channels based on AR models

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Abstract:A fast novel simulator for wireless fading channels based on Autoregressive (AR) Mode was proposed. Rayleigh fading channels were generated by filtering independent identically distributed white Gaussian noise, and have the same statistical properties as the real wireless channel. The presented model can be used in assessing performances and system design of wireless communication systems. The results show that the new simulator is more coincident with the real channel statistic characteristics, and has lower complexity than that of SOS (Sum of Sinusoids) approaches. It can be easily achieved by software and hardware in laboratory.

Key words:channel model; rayleigh fading; sinusoids; AR model

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