基于Walsh码的多用户正交调制混沌通信方案

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摘要　基于Walsh码产生正交载波，
提出两种多用户正交调制混沌通信方案。方案一发送端对多个用户的数字信息进行正交调制，
接收端基于混沌同步根据最小误差概率准则检测数字信息。方案二发送端用多个不同的时隙同时传送多个用户的数字信息，
接收端采用相关法非相干检测。分析了两种方案的理论误码性能并进行了仿真，
结果表明两种方案的抗噪声及抗多径干扰的能力均较强。
关键词　信息处理技术　混沌通信　正交调制　多用户　Walsh码　最小误差概率准则　相关法
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Multiuser chaotic communication schemes with quadrature modulation based on the Walsh codes

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Abstract Based on the Walsh codes, orthogonal carriers are generated. Two multiuser chaotic communication schemes with quadrature modulation are proposed. In the first scheme, at the transmitter, the digital information bits of several users are modulated with quadrature modulation. At the receiver, based on chaos synchronization, the information bits are detected following the minimum error probability criteria. In the second scheme, the digital information bits of several users are transmitted at several different time slots. At the receiver, the information bits are detected noncoherently using the correlation method. The analytical expressions of the bit error rates and simulation results of both schemes show that both of them have good performance in noise reduction and multipath interference cancellation.

Key words information processing　chaotic communication　quadrature modulation　multiuser　Walsh codes　minimum error probability criteria　correlation method

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