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Abstract
Orthogonal Frequency Division Multiplexing（OFDM）is an attractive modulation technique for high data rate Wireless Local Area Network（WLAN）due to its good performance in fading channels. Conventional OFDM transmission system uses a fixed-length cyclic prefix to counteract inter-symbol interference caused by channel multipath fading. And a fixed proportion of 1/4 on CPs will spend the energy and time.
In this thesis，we employ Genetic Algorithm（GA），Evolutionary Programming（EP）and Chaos-Evolutionary Programming（CEP）to achieve a minimum degradation of OFDM system over multipath fading and Additive White Gaussian Noise（AWGN）channels. They are used to extract the optimum value of the guard interval（GI）parameter，which is introduced to solve the problem of interference that occur at the receiver.
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