研究简报

自适应量化测试序列数的分组Turbo码译码算法

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摘要
针对分组Turbo码自适应Chase译码算法存在的缺陷，该文提出自适应量化测试序列数的分组Turbo码译码算法。该方法以测试序列数C为研究对象，依出错概率大小选择错误图样，并利用量化测试函数根据SNR的变化对测试序列数进行量化，从而达到直接控制译码复杂度的目的。仿真结果表明，所提出的译码算法保证了译码性能，并直接降低了译码复杂度。

关键词　　分组Turbo码　　测试序列数　　Chase算法　　信噪比　　误码率

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Decoding Algorithm for Block Turbo Codes Based on the Adaptive Quantized Testing Sequences

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Abstract
Considering the defects in the adaptive Chase algorithm, a novel decoding algorithm for block Turbo codes based on the adaptive quantized testing sequences is proposed. This algorithm is employed to investigate the number of testing sequences, select the test patterns according to the possibility of least reliable bits, and use the quantizing-testing function to quantize the testing sequences according to the level of SNR, which can adaptively adjust the complexity of decoding. The simulation results show that, compared with the traditional algorithms, the proposed algorithm can reduce the decoding complexity with the same BER performance.

Key words　Block Turbo Codes (BTC)　Testing sequences　Chase algorithm　Signal-to-Noise Ratio (SNR)　Bit Error Rate (BER)

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