Q-ary LDPC Decoders with Reduced Complexity

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Abstract

Q-ary low-density parity-check (LDPC) codes achieve exceptional error performance at the expense of computation simplicity. Solutions to accelerate the decoding process have become one of the focuses in literature. In this paper, a decoding method is proposed, based on the subcode concept, to speed up the dominant iterative process. The method leads to speed improvement with moderate error-performance penalty.

Index Terms

Bit error rate, complexity, LDPC code, q-ary LDPC code, subcode.

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