

论文

一种基于分段CRC的LDPC译码的改进算法

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摘要

级联多个循环冗余校验 (CRC) 的LDPC译码算法有效地改善了译码的收敛特性。然而在其译码算法中, 当CRC检测的整体漏检概率不够低时, 出现误码平台。因此, 该文提出了改进算法, 通过减少在译码算法中CRC检测的次数, 降低整体漏检概率, 提高了误码性能。仿真表明改进的算法提高了误码性能, 译码复杂度也增加不大。

关键词 [低密度奇偶校验码](#) [循环冗余校验](#) [置信度传播算法](#)

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Improved Method for LDPC Decoding Algorithm Aided by Segmented Cyclic Redundancy Checks

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Abstract

A decoding method for LDPC codes concatenated by multiple Cyclic Redundancy Checks (CRCs) has improved the convergence of the decoding effectively. However, the error floor of the decoding appears due to the high overall Undetected Error Probability (UEP) of CRCs. Therefore, This work improves the Codeword Error Rate (CER) performance further based on the fact that the overall UEP of CRCs in decoding can be reduced when the application times of CRCs checking are decreased. The simulation results show the performance improvements in terms of CER, while decoding complexity is slightly increased.

Key words [Low-Density Parity-Check \(LDPC\)](#) [Cyclic Redundancy Check \(CRC\)](#) [Belief-Propagation \(BP\)](#)

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