

有效減少低密度同位元檢查碼中陷阱集合數量之演算法

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摘要

In this paper, we discuss how to construct low-density parity-check (LDPC) codes, and algorithm to improve the performance (error floor) in the high SNR region by reducing trapping sets. We observe that in the trapping set elimination algorithm, choices of freezing edges, number of phases, and edge swapping are the critical factors. We found that proper combination of the above three factors can reduce trapping sets effectively, despite its high complexity. The method we proposed is universal, as it can be applied to any LDPC code/channel /decoding algorithm. It improves performance at the expense of increasing the code length. However, the code regularity and decoding algorithm remain unaltered.

關鍵字：trapping sets, error floor, low-density parity-check codes