設計一個結構化的低密度同位元檢查碼使能有較大周長及改進錯誤率平緩之現象

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摘要

LDPC (low-density parity-check) codes have been popular in recent years with its application in communication systems or data storage. In this paper, we present a modified partition-and-shift LDPC code construction algorithm to increase the girth of a fixed-length LDPC code or to reduce required code-length for a fixed girth constraint. Similar to Lu's original method [10], the constructed LDPC code can have arbitrary column weight, row weight and girth. The codes we build have smaller scaling factors than that of Lu's. With the reduced code length or increased girth, the error floor can be extended even lower.

關鍵字：LDPC codes, girth, short cycle, code rate