Good Codes Singleton Bound

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Abstract

We propose a new asymptotic upper bound on the trade-off between the rate and the distance of a good error correction code.

1 Preambles

Coding theory has emerged by the need to transfer information in noisy communication channels. By embedding a message in higher dimension space, one can guarantee robustness against possible faults. The ratio of the original content length to the passed message length is the rate of the code, and it measures how consuming our commiunimcatin protocol is. Furthermore, the distance of the code quantifies how many faults the scheme can absorb such that the receiver could recover the original message. Even that is obvious that any construction resilient to a large number of faults should have a complexity price, The exact relation between the rate and the code distance. We say that code is good if its distance and rate are scale linear in the length of the encoded message. Having those properties applies that the code is consuming efficent.sectionIntroduction

2 Tanner Code

3 Construction