Constructing Codes Using Transitive Permutation Groups

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An \((n, M, d)\) code is a set that contains \(M\) codewords of length \(n\) such that the Hamming distance between any two codewords is at least \(d\). A long-standing problem in information theory is to construct, for fixed \(n\) and \(d\), a code where \(M\) is large. We use computer search to construct large codes that are based on transitive permutation groups.

Keywords: information theory, codes, computer search