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Error-detecting and error-correcting properties of binary superposition code $M_q(i : n, k, d)$.

(Chinese. English summary) [Zbl 07366894]

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Summary: For natural numbers $i, d, k, n$, $0 < i \leq d < k < n$, the binary superposition code $M(i : n, k, d)$ is a binary superposition code based on intersecting relation of two subsets in the finite set $[n] = \{1, 2, \cdots, t\}$. Hamming distance of the binary superposition code $M(i : n, k, d)$ is studied and its error-detecting and error-correcting properties are obtained.

MSC:

94B25 Combinatorial codes
94B60 Other types of codes
05B20 Combinatorial aspects of matrices (incidence, Hadamard, etc.)

Keywords:

binary superposition code; separable matrix; Hamming distance; error-detecting