

Some New 4-dimensional Linear Codes

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We construct some new $[n, 4, d]_q$ codes to determine the exact value of $n_q(4, d)$ or to give new upper bounds on $n_q(4, d)$ for $q = 7, 8$, where $n_q(k, d)$ is the minimum length n for which an $[n, k, d]_q$ code exists. We also construct $[2q^3 - 2q^2 + 1 - t(q + 1), 4, 2q^3 - 4q^2 + 2q - tq]_q$ codes for $0 \leq t \leq q - 1$ for $q \geq 7$.

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