

ON THE COVERING RADIUS OF SOME CODES OVER $R = \mathbb{Z}_2 + u\mathbb{Z}_2$, WHERE $u^2 = 0$

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ABSTRACT

In this correspondence, we give lower and upper bounds on the covering radius of codes over the ring $R = \mathbb{Z}_2 + u\mathbb{Z}_2$ where $u^2 = 0$ with respect to different distance. We also determine the covering radius of various Repetition codes, Simplex codes (Type α and Type β) and their dual and give bounds on the covering radius for MacDonald codes of both types over R .

KEYWORDS: Covering Radius, Codes over Finite Rings, Simplex Codes, Hamming Codes