

An Improvement of the Asymptotical Upper Bound for the Cardinality of Sidon Sets of Vectors with Binary Components

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Let $G = (\mathbb{Z}_2)^k$. That is, the set of k -dimensional vectors with binary components. We say that a subset of G (call this A) is a 'Sidon Set' if all pairwise sums, $a_i + a_j$ ($i < j$) in A , are distinct (mod 2). The problem is to estimate the cardinality of A (typically denoted $|A|$) asymptotically. In this project, we improve the current best upper bound of $|A|$ - provided in 1969 by the Swedish mathematician, Bernt Lindström