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*Balanced Splittable Hadamard Matrices: Constraints and Constructions*

The construction and analysis of Hadamard matrices have been a long standing problem in combinatorial design theory. Recently, Kharaghani and Suda introduced balanced splittable Hadamard matrices, a special type of Hadamard matrices with intriguing internal structures. These matrices have natural connections to various combinatorial objects, especially strongly regular graphs. We will outline constraints on the parameters of balanced splittable Hadamard matrices and describe a construction method using elementary abelian 2-groups.