

Some matrix constructions of non-symmetric regular group divisible designs

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Abstract. Saurabh and Sinha (Bull. Inst. Combin. Appl. **95** (2022) and Bull. Inst Combin. Appl. **97** (2023)) obtained solutions of L_2 -type designs, semi-regular group divisible and symmetric regular group divisible designs in the range of $r, k \leq 10$ using certain combinatorial matrices. Here by using matrix approaches, solutions of non-symmetric regular group divisible (RGD) designs listed in (Clatworthy, Tables of two–associate–class partially balanced designs, U.S. Department of Commerce, National Bureau of Standards, Washington, DC Report No. NBS-AMS-63, 1973) are obtained except for a few. As special case we obtain a series of μ -resolvable balanced incomplete block designs and quasidouble solutions of some RGD designs.

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