Multi-structured Designs and their Applications

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Abstract

A multi-structured design is a block design whose blocks have further structure like partitions, orders, arrays, etc. This problem have strong relationship to combinatorial arrays like orthogonal arrays, balanced arrays, and also many types of sequence problems, optical orthogonal codes, frequency hopping sequences, comma-free codes, etc. There are many different names of block designs which have close definitions. I like to integrate various types of multi-structured designs and their constructions.