Abstract

Transitive designs constructed from finite groups and related codes

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In this talk we describe a construction of 1-designs determined by a transitive action of a finite group. We apply this method to construct transitive designs from some finite simple groups. Some of the constructed 1-designs are also 2-designs. One can use this method to construct other combinatorial structures admitting transitive automorphism group, e.g. strongly regular graphs. Further, we discuss linear codes obtained from the constructed combinatorial structures and the corresponding orbit matrices.