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Generalized covering and packing designs

Covering designs are a generalization of t-designs, where the requirement that any t-subset of points be contained in *exactly* λ blocks is replaced with the weaker requirement that they be contained in *at least* λ blocks. Covering arrays generalize orthogonal arrays in a similar manner. In this talk, we will present a common generalization of covering designs and covering arrays, as well as some methods of constructing these new designs.

We will also discuss the "dual" problem of packing designs, which are defined by the opposite weakening of the definition, where any t-subset of points may be contained in *at most* λ blocks, and where a similar generalization may be made.