# Orthogonal Arrays; Enumeration and Applications

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Orthogonal arrays are used in the design of experiments in statistics, in computer science as well as in many fields of combinatorics. In this talk, I will give an application of orthogonal arrays to construct D-optimal discrete choice experiments.

Later, I will address the existence problem of orthogonal arrays, and I will describe new algorithms to enumerate all orthogonal arrays with given parameters. Key techniques include eliminating significant space requirements, using previously-computed information on substructures in an efficient way. Computational results show these algorithms to be significantly faster than the prior state-of-the-art.