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Popularity Block Ordering for Steiner Systems

Steiner systems are used for data layout in distributed storage systems. However, assignment of data items to storage units often ignores the long-term item popularity. To address popularity, we order the blocks of a design, computing the point sum of an element as the sum of the indices of blocks containing that element. Popularity block ordering asks for the point sums to be as equal as possible. Remarkably, for many parameter sets, the blocks of a Steiner system can be ordered to make all point sums equal! In this talk, we outline some techniques for constructing such egalitarian Steiner systems.