On the existence of uniform 3-class regular partial Steiner triple systems
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A partial steiner triple system (X, T) is a finite set of points X and a collection T of 3-element subsets of X that every pair of points intersect in at most 1 triple. A 3-class regular PSTS (3-PSTS) written as \(\{m \cdot \alpha, n \cdot \beta, p \cdot \gamma\}\) is a PSTS where the points can be partitioned into 3 classes (each class having size m, n and p respectively) such that no triple belongs to either class and any two points from the same class occur in the same number of triples (\(\alpha, \beta\) and \(\gamma\) respectively). The 3-PSTS is said to be uniform if \(m = n = p\). In this presentation, I will talk about some constructions for the existence of 3-PSTS \(\{m \cdot \alpha, m \cdot \alpha, m \cdot \alpha\}\).

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