

## Popularity and Steiner Triple Systems

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In certain mapping schemes for data in large-scale secondary storage systems, Steiner systems are used to determine data placement in order to address performance and reliability requirements. In practice, some data items are more popular than others. As a consequence, interesting problems on point labellings of Steiner systems arise. Having labelled the  $v$  points of a Steiner system with the integers from 1 to  $v$  (with two points always receiving distinct labels), the *sum* of a block is the sum of the labels of its points. The **DiffSum** is the difference between the largest sum of a block and the smallest sum. We briefly examine two questions: (1) Given a Steiner system, what can its smallest **DiffSum** be? (2) Given the parameters of a Steiner system, what is the the smallest **DiffSum** for any Steiner system with these parameters?

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