
AMY WIEBE, University of British Columbia Okanagan

Counting transversals in group-based Latin squares

Finding the exact number of transversals in a Latin square is a long-studied and difficult problem. Even in the simple setting of the Cayley table of the group $\mathbb{Z}_n$, estimating the number of transversals theoretically is a challenge. For groups of order $n \leq 16$ and cyclic groups of order $n \leq 21$, Shieh et. al [2000] enumerated transversals computationally. Further study by McKay, McLeod, and Wanless [2006] revealed many interesting patterns in these transversal counts. Notably, they ask whether the Cayley table of every 2-group of order n has a number of transversals divisible by 2^{n-1} . In this talk, we introduce a "contract-and-lift" method for approaching this question.

This is joint work with Jim Davis and Jonathan Jedwab.