

# Parity of sets of MOLS

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Parity is a familiar and important notion in the study of permutations. Latin squares are two dimensional permutations and also have some kind of parity. In fact, they have three basic attributes, each of which can be either even or odd. These obey a relationship which means that any two determine the third. So in information theory terms there are really two parity bits (i.e. 4 possible parities). In this talk I will

(a) prove that the possible parities are roughly equally likely when you select a Latin square at random out of a (very large) hat, and

(b) report on our efforts to generalize to a notion of parity for sets of Mutually Orthogonal Latin Squares (MOLS).

Joint work with (a) Nick Cavenagh and (b) Sarada Herke, Nevena Francetic and Brendan McKay.