

## Orthogonal Realizations of Random Sign Patterns

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A sign pattern  $S$  is a  $(+, -, 0)$ -matrix whose entries represent positive, negative, and zero entries of a real matrix. We are interested in sign patterns that allow orthogonality, i.e., sign patterns  $S$  for which there exists a row orthogonal real matrix whose entries have the same sign as the corresponding entries in  $S$ . This talk investigates the probability that a random sign pattern allows orthogonality. We show that if  $S$  is an  $m \times n$  sign pattern and  $n \geq m^2 + Cm \log m$  for some  $C$ , then with high probability  $S$  allows orthogonality.

Keywords: orthogonal matrices, sign patterns, strong properties