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Nodal Statistics for Graphs and Matrices

The study of discrete nodal statistics, that is, data regarding the zeros of Laplacian eigenvectors, provides insight into structural properties of graphs and matrices, and draws strong parallels with classical results in analysis for Laplacian eigenfunctions. In this talk, we will give an overview of the field, covering key results on nodal sets for graphs and their connection to known results and open problems in the continuous setting. In addition, we will discuss some recent progress towards a more complete understanding of the extremal properties of the nodal statistics of a matrix.