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What does the average eigenvalue
know about a graph?

Abstract:

The average of the first k eigenvalues of the Laplacian (or similar operator) on a discrete or quantum graphs satisfies various inequalities related to the structure of the graph. I will present some methods for obtaining inequalities for averages of eigenvalues and will use them to obtain sharp bounds in terms of the structure of the graph. This work is joint with J. Stubbe and J. Dever.