Department of Mathematics,
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Food For Thought Seminar

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Polynomial relations of matrices of graphs

Abstract:

Have you ever looked at two matrices and thought to yourself "Man, I wonder if there's a polynomial of the first matrix equal to a polynomial of the second matrix?" If yes, then boy is this the perfect talk for your highly specific interests. For everyone else, I hope to convince you that asking such a question can be a surprisingly interesting and fun process. Specifically, we're going to look at this question when our two matrices come from some graph G. When our matrices satisfy a certain relation, we'll be able to use this relation to translate from eigenvalues of one matrix to eigenvalues of the other, and using spectral graph theory we'll be able to conclude various properties about our original graph from this.

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