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COMBINATORICS OF THE FIGURE EQUATION ON DIRECTED GRAPHS

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Abstract of Summary Talk: There are many ways to calculate the characteristic polynomial of a directed graph. I will describe the Figure Equation, which provides a direct link between a graph's structure and the coefficients of the characteristic polynomial of its adjacency matrix. Using the figure equation and combinatorics on disjoint cycles, I will show how to calculate the characteristic polynomial of some graphs at sight and prove recursion patterns for some families of graphs. I will relate this approach to graph coverings and derivatives.

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