

MATH COLLOQUIUM

Extremal Eigenvalues of Graphs

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Date : Wednesday, March 24, 2010

Time : 14:00

Place : TB 250, Boğaziçi Üniversitesi

Abstract: The fundamental graph properties e.g. coloring, diameter, isomorphism and connectivity are closely related (or bounded) to the eigenvalues of matrix representations of these graphs (e.g. adjacency matrix or Laplacian matrix of the graph). The sharp eigenvalue bounds for such graph invariants depend on the extremal eigenvalues. Extremal graph eigenvalue problem is finding a graph in a given graph class that has the minimum (or maximum) eigenvalue for a given matrix representation.

I shall talk about these connections between graph properties and eigenvalues of graphs. I shall present results, methods, difficulties and possible further research topics on extremal graph eigenvalue problems. This talk is intended for general audience. No specialist knowledge is required.

Tea and coffee will be served at 15:00