Some open problems in spectral graph theory

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Abstract

In this talk, I will present some recent work in spectral graph theory related to determining various eigenvalues of the associahedron graph and of the flip graph on perfect matchings as well as a question of Hong from 1993 about the minimum spectral radius of connected graphs of given order and size. This talk is based on joint work with Vishal Gupta (University of Delaware), Celso Marques (CEFET, Brazil), Gordon Royle (Univ of Western Australia) and Zhao Kuang Tan (NTU, Singapore).

Keywords: associahedron graph, flip graph, spectral radius.