Spectral Graph Theory

Organizers:
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Description:
Spectral Graph Theory is an important part of discrete mathematics with applications in many areas such as computer science, chemistry, network design and coding theory. One of the main goals of the theory is to deduce the principal properties of a graph from the spectral information furnished by one or more of the matrices associated with it (for instance the adjacency matrix, the Laplacian matrix or the normalized Laplacian matrix). In recent years, we have seen many new results connecting the eigenvalues of a graph with its independence number, the maximum number of independent edges, the chromatic number and the existence of certain subgraphs. This minisymposium will showcase some of these connections and their applications.

Titles and Speakers:

- *Perfect matchings in regular graphs from eigenvalues*
  Sebastian M. Cioabă (University of California, San Diego), David Gregory (Queen's University), Willem Haemers (Tilburg University)
- *Limit points for normalized Laplacian eigenvalues*
  Steve Kirkland (University of Regina)
- *Constructing cospectral symmetric powers*
  Chris Godsil (University of Waterloo)
- *Spectra of non-regular graphs and non-backtracking*
  Joel Friedman (University of British Columbia)
- *Cycles and the spectral radius*
  Vladimir Nikiforov (University of Memphis)