Discrete Dynamical Systems over Graphs

Organizer(s):
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Description:
The study of dynamical systems over graphs is a growing area of mathematics and computer science with very interesting mathematical problems and many application areas. Examples include cellular automata and sequential dynamical systems. Their analysis combines techniques from discrete mathematics, combinatorics, algebra, and dynamical systems theory. This mini-symposium features talks on recent developments in this area, including both theoretical results and applications. Topics include persistent defects in cellular automata (Pivato), number-preserving cellular automata (Fukś), limit cycles of polynomial systems (Jarrah), schedule-instability of threshold systems over graphs (Mortveit), and applications to routing and network protocols (Hansson).

Titles and Speakers:

- *Scheduling Instability for Finite Dynamical Systems over Graphs*
  Henning S. Mortveit (Virginia Tech)

- *Enumeration of Number-Conserving Cellular Automata*
  Henryk Fukś (Brock University)

- *Monomial Dynamical Systems over Finite Fields*
  Abdul S. Jarrah (Virginia Tech)

- *Emergent Defect Dynamics in Cellular Automata*
  Marcus Pivato (Trent University)

- *A Sequential Dynamical Systems Framework for Congestion-Aware Routing*
  Anders Å. Hansson (Los Alamos National Laboratory)