Polynomial systems, homotopy continuation and applications

January 2–3, 2023  |  Boston, MA

in conjunction with the Joint Mathematics Meetings

Organized by:
Timothy Duff, University of Washington and Margaret Regan, Duke University

Speakers include Silvana Amethyst, University of Wisconsin, Eau Claire; Jonathan Hauenstein, University of Notre Dame; Anton Leykin, Georgia Institute of Technology; Julia Lindberg, Max Planck Institute; Mark Plecnik, University of Notre Dame; and Jose I. Rodriguez, University of Wisconsin, Madison

This two-day, in-person short course will offer an introduction to the theory of polynomial systems, homotopy continuation, and their applications.

Systems of multivariate polynomial equations are ubiquitous throughout mathematics and neighboring scientific fields such as kinematics, computer vision, power flow systems, and more. Numerical homotopy continuation methods are a fundamental technique for both solving these polynomial systems and determining more refined information about their structure. A research community has blossomed around the subject, with important work on both basic methods and applications.

The American Mathematical Society’s Short Courses connect mathematicians and students to emerging areas of applied mathematics. Short Courses are designed to introduce individuals to new topics, fueling the participant’s curiosity, discovery, or research.

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