

ACMS Applied Math Seminar

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Thursday, September 23, 2021
154 Hurley Hall
3:30 PM – 4:30 PM



Maximum Likelihood Degrees of Point Configurations

The goal of likelihood inference in statistics is to maximize a monomial z^u over some statistical model M . The number of critical points of this optimization problem measures its complexity and is called the maximum likelihood degree of the model. When M is the configuration space of points on a projective line, the critical equations are known in the physics literature as scattering equations. The number of solutions to these equations is well-known, but the analogous numbers for higher dimensional projective spaces remain elusive.

Using techniques from algebraic geometry, topology, tropical geometry, combinatorics, and numerics, we discuss a computational framework for counting, computing, and understanding the solutions to these generalized scattering equations.

The Department of Applied and Computational
Mathematics and Statistics

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