

ACMS Applied Math Seminar

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Wednesday, April 30, 2025

154 Hurley Hall

3:30 PM – 4:30 PM

Convex Programming Relaxations for High-Dimensional Fokker-Planck Equation

In this talk, we explore adaptations of semidefinite programming relaxations for solving PDE problems. Our approach transforms a high-dimensional PDE problem into a convex optimization problem, setting it apart from traditional non-convex methods that rely on nonlinear re-parameterizations of the solution. In the context of statistical mechanics, we demonstrate how a mean-field type solution for an interacting particle Fokker-Planck equation can be provably recovered without resorting to non-convex optimization.

The Department of Applied and Computational
Mathematics and Statistics

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