Mathematics, Statistics, and Computer Science   **@ UIC**

Analysis and Applied Mathematics Seminar

Multivariate Spline Method for Solving Monge-Ampere Equation

Jinsil Lee (U Georgia)

Abstract: In this talk, I will give a brief introduction to a trivariate spline collocation method for solving the Dirichlet problem of the 3D elliptic Monge-Ampère equation. Specifically, I will explain the spline collocation method introduced in [SIAM J. Numerical Analysis, 2405-2434,2022] to numerically solve iterative Poisson equations, and incorporate an averaged algorithm to ensure convergence of the iterations. Furthermore, I present various computational results, including testing known convex and non-convex solutions over convex and non-convex domains to demonstrate the efficiency and effectiveness of the method.

Monday, April 10 at 4:00 PM in 1227 SEO