THE UNIVERSITY OF CHICAGO | THE COMMITTEE ON COMPUTATIONAL AND APPLIED MATHEMATICS

COLLOQUIUM

QIANG DU

Applied Physics and Applied Mathematics, and Data Science Institute,
Columbia University

Integral equation models with nonlocal operators: applications and recent developments

THURSDAY, April 16th at 4:00 PM
Jones 303, 5747 S. Ellis Ave. Chicago, IL 60637

ABSTRACT

Recent applications and theoretical developments of integral models using nonlocal operators have shown promise as effective alternatives to local models, especially in the presence of singularities and anomalies. These models also serve as continuum limits for large-scale discrete models used in data learning and network analysis. In this talk, we give an overview of some progress on models involving a finite range of interactions. For problems defined on bounded domains, we discuss various options for modeling nonlocal interactions in the interior and on the boundary. We also present recent advances in the mathematical and numerical analysis of these problems, as well as their applications.

Organizers:
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