

DREXEL ANALYSIS SEMINAR

November 17, 2023

12-1 PM, Korman 245

**Speaker:** Georgi Medvedev (Drexel)

**Title:** Galerkin approximation of a nonlocal diffusion equation on Euclidean and fractal domains

**Abstract:** The continuum limit of a system of interacting particles on a convergent family of graphs can be described by a nonlocal evolution equation in the limit as the number of particles goes to infinity. Given the continuum limit, the discrete model can be viewed as a Galerkin approximation of the limiting continuous equation. We estimate the speed of convergence of the Galerkin scheme for the model at hand on Euclidean and fractal domains. The latter are relevant when the underlying family of graphs approximates a fractal.