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

Statistics and Data Science Seminar

Estimates for the Dirichlet heat kernel on inner uniform domains

Janna Lierl (UIUC)

Abstract: I will present sharp two-sided bounds for the Dirichlet heat kernel on bounded domains. The domain is assumed to satisfy an inner uniformity condition. For example, the interior of the Koch snowflake is an inner uniform domain, as is any convex domain, or the complement of any convex domain in Euclidean space. More generally, we have considered the Dirichlet heat kernel on domains in a metric measure Dirichlet space, assuming the space satisfies a Poincar\'e inquality and has the volume doubling property. We have also considered non-symmetric Dirichlet spaces. In particular, we can estimate the Dirichlet heat kernel if the kernel is associated with a differential operator in divergence form with bounded measurable coefficients and symmetric uniformly elliptic second order part. This talk is based on a joint paper with Laurent Saloff-Coste.

Wednesday, January 28 at 4:00 PM in SEO 636