

TEMPLE UNIVERSITY

Department of Mathematics

Analysis Seminar

Room 617 Wachman Hall

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Sharp estimates of the spherical heat kernel

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Abstract:

The classical spherical heat kernel is an important object in analysis, probability and physics, among other fields. It is the integral kernel of the spherical heat semigroup and thus provides solutions to the heat equation based on the Laplace-Beltrami operator on the sphere. It is also a transition probability density of the spherical Brownian motion. In this talk we prove sharp two-sided global estimates for the heat kernel associated with a Euclidean sphere of arbitrary dimension. If time permits, we will present a generalization of this result to the compact rank-one symmetric spaces. The talk is based on joint papers with Adam Nowak and Peter Sjögren