



RUTGERS - CAMDEN MATH SEMINAR

11-12, FRIDAY MARCH 4TH, BSB 132

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Dr. Santosh Vempala

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Title: The Manifold Joys of Sampling

Abstract: Sampling high-dimensional sets and distributions is a fundamental problem with many applications. The state-of-the-art is that arbitrary logconcave densities can be sampled to arbitrarily small error in time polynomial in the dimension using simple Markov chains based on Euclidean geometry. In this talk, we describe algorithms that exploit varying local geometry and can be viewed as sampling Riemannian manifolds. This approach will let us derive more efficient algorithms for some cases of interest, as well as analyze affine-invariant versions of Euclidean algorithms, such as the Dikin walk, Hamiltonian Monte-Carlo and Riemannian Langevin.

