

abstract

Analysis Seminar
Topic:

Speaker:

Affiliation:

Date:

Time/Room:

The Fermionic Fokker-Planck equation is a quantum-mechanical analog of the classical Fokker-Planck equation with which it has much in common, such as the same optimal hypercontractivity properties. In this paper we construct a Riemannian metric on the space of density matrices that we show to be a natural analog of the classical 2 -Wasserstein metric, and we show that, in analogy with the classical case, the Fermionic Fokker-Planck equation is gradient flow in this metric for the relative entropy with respect to the ground state. We derive a number of consequences of this, such as a sharp Talagrand inequality for this metric, and we prove a number of results pertaining to this metric. Several open problems are raised. This is joint work with Jann Maas.