Abstract

MASAMUNE, Jun (Hokkaido University)

"A generalized conservation property for the heat semigroup on weighted manifolds"

We say that the Laplacian of a Riemannian manifold is conservative if a constant function is stable under the associated semigroup. This means that the manifold does not lose heat. One of the best ways to determine the conservativeness is Khasminskii's criterion; namely, the Laplacian is conservative if and only if there is no nontrivial bounded solution to the associated parabolic equation with vanishing initial data. In this talk, we study the corresponding problem to a Schrödinger operator with non-negative potential, which is never conservative in the sense above. We will propose a generalized conservation property for the semigroup of a Schrödinger operator and establish Khasminskii's criterion for the generalized conservation property and discuss several applications. A joint work with Marcel Schmidt at Jena University.