

1035-58-1611

Jun Masamune* (jmasa1@apricot.ocn.ne.jp), Department of Mathematical Sciences,
Worcester Polytechnic Institute, 100 Institute Road, Worcester, MA 01609-2280. *Liouville
properties, stochastic completeness, and self-adjointness.*

A weighted manifold M is a manifold furnished with a Riemann tensor and a measure which has a smooth density against the Riemann measure. It carries a second-order elliptic operator called the weighted Laplacian.

A weighted manifold M is said to be stochastic complete if the Brownian motion associated to the weighted Laplacian can be found in M for any positive time. In this talk we will discuss a Liouville type property which implies the stochastic completeness and observe that the stochastic completeness implies the essential self adjointness of the weighted Laplacian of a non-compact weighted manifold. We will also observe that if the Cauchy boundary $\partial_C M := \overline{M} \setminus M$ of M , where \overline{M} is the completion of M , is almost polar, then the weighted Laplacian is essentially self-adjoint. The main results of the talk are obtained in the joint work with A. Grigor'yan. (Received September 20, 2007)