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Xiangjin Xu* (xxu@math.binghamton.edu), Department of Mathematical Sciences, Binghamton University-SUNY, 4400 Vestal Parkway East, Binghamton, NY 13902. *Li-Yau type gradient estimates and a Liouville Type Theorem for the Schrödinger Operator*. Preliminary report.

In this talk, we first obtain new Li-Yau type gradient estimates for positive solutions of parabolic equations of the type

$$(\Delta_g - q(x) - \partial_t)u(x, t) = 0$$

on complete Riemannian manifolds with nonnegative Ricci curvature. As applications, Liouville type theorems for the Schrödinger equation

$$(\Delta_g - q(x))u(x) = 0$$

are obtained under some weaker conditions, which generalizes those results in the literature. (Received September 09, 2013)