

Differential Harnack inequality and entropy formula on complete Riemannian manifolds

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Abstract: In this talk, we present a Li-Yau differential Harnack inequality for the heat equation associated to symmetric diffusion operators on complete Riemannian manifolds. We will also study Perelman's W -entropy for diffusion operators and prove its monotonicity under the non-negativity condition of the Bakry-Emery Ricci curvature.