Temple University Mathematics Colloquium

Nicola Garofalo

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will speak on

Generalized curvature-dimension inequalities, Li-Yau inequalities and volume growth in sub-Riemannian geometry

ABSTRACT: I will discuss some recent joint works with F. Baudoin, with Baudoin and M. Bonnefont, and with Baudoin, Bonnefont and I. Munive. Starting from a generalization of the curvature-dimension inequality, we develop a notion of Ricci lower bound that is appropriate for large classes of sub-Riemannian manifolds, including (CR) Sasakian manifolds and stratified nilpotent Lie groups with step two. In these sub-Riemannian manifolds we prove parabolic inequalities of Li-Yau type, a scale invariant Harnack inequality, Gaussian upper and lower bounds, a global volume doubling estimate, global Poincare' inequalitties, and a compactness theorem of Bonnet-Myers type. The lecture will have an expository character.

Monday, March 12, 2012
Lecture at 4:00 pm
Coffee, tea, and refreshments from 3:40 pm
Room 617, Wachman Building
Department of Mathematics