![Logo Università degli Studi di Parma]

UNIVERSITÀ DEGLI STUDI DI PARMA

COLLOQUIUM DEL
DIPARTIMENTO DI MATEMATICA E INFORMATICA
CAMPUS – PARCO AREA DELLE SCIENZE, 53/A
www.dmi.unipr.it

Giovedì 3 dicembre, ore 16,30

Prof. Nicola Garofalo

Università degli Studi di Padova

Nell'ambito del Colloquium il **prof. Nicola Garofalo**, **Giovedì 3 dicembre** alle ore **16,30** presso la Sala delle Riunioni del Dipartimento, terrà un seminario dal titolo:

Ricci lower bounds, curvature-dimension and Li-Yau inequalities, and the omnipresent heat equation

Tutti sono invitati a partecipare

Proff. Adriano Tomassini, Alessandra Lunardi

Abstract. In the early 80's Li and Yau obtained their fundamental gradient estimates for positive solutions of the heat equation on complete Riemannian manifolds which Ricci tensor bounded from below. Such estimates imply a host of global results in Riemannian geometry, such as intrinsic Harnack inequalities, Gaussian upper bounds, Liouville theorems, etc. In this lecture I will give an overview of a program which, starting from a new notion of Ricci lower bounds in sub-Riemannian geometry based on the heat semigroup, proceeds to establishing several results of a global nature linking curvature lower bounds to various quantitative estimates of solutions of the relevant heat equation. The approach which will be presented is novel even in the Riemannian setting. The character of my lecture will be completely self-contained.