



SCUOLA
NORMALE
SUPERIORE
PISA

SEMINARI DI MATEMATICA

Giovedì 9 dicembre 2010
ore 16.00

Scuola Normale Superiore
Pisa
(Aula Tonelli)

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Terrà un seminario dal titolo:

“A Differential Nullstellensatz and the Mordell-Lang Conjecture”

Abstract:

The Mordell-Lang Conjecture is a difficult statement about the rational points of the subvarieties of semi-abelian varieties, and it has several consequences in diophantine geometry, such as Faltings' Theorem and the Manin-Mumford Conjecture. It has been proven with several methods, ranging from algebraic geometry to model theory. We focus our attention on the relative Mordell-Lang Conjecture for function fields of characteristic 0. Since in this case the ground field is equipped with a differential operator, it is possible to embed it in a so-called "differentially closed field": in such fields, a weak form of Nullstellensatz holds (i.e., varieties defined as zeroes of differential polynomials have rational points in the fields). We will see how this differential Nullstellensatz can be axiomatized, and we will show some basic consequences that establish analogies between the structure of differential varieties and algebraic varieties. We will then discuss some of the ideas behind exploiting differentially closed fields in order to give a relatively simple proof of the Mordell-Lang Conjecture for function fields (from works of Buium, Pillay and Ziegler)."

Tutti gli interessati sono invitati a partecipare.

Classe di Scienze



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