*Institute of Mathematical Research*
*Department of Mathematics*

# Geometry Seminar

## January 11, 2013 (Friday)
## Room 210, Run Run Shaw Bldg., HKU

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### Professor Vikram Mehta

Indian Institute of Technology, Bombay

*The fundamental group schemes and some open questions*

**3:00 – 4:00pm**

#### Abstract

I will survey some recent results on the different fundamental group schemes in algebraic geometry, starting with the foundational work of M. Nori.

### Professor Giovanna Carnovale

Universitá di Padova

*Sheets of conjugacy classes*

**4:00 – 5:00pm**

#### Abstract

The sheets for an action of an algebraic group $G$ on a variety $X$ are the irreducible components of the locally closed subsets of $X$ consisting of points whose orbit has a prescribed dimension. Sheets for the adjoint action of $G$ on $X = \mathrm{Lie}(G)$ have been parameterized and described by Borho and Kraft. We will list some representation theoretic motivations for studying sheets of conjugacy classes and we will provide an analogue of Borho and Kraft's results in this setting. This talk is based on joint work with F. Esposito.

*All are Welcome*