Welcome Home Workshop 2014

NOME: Andrea

COGNOME: Ricolfi

AFFILIAZIONE: University of Stavanger

POSIZIONE: Studente di dottorato

EMAIL: atricolf@gmail.com

LINGUA PER LA CONFERENZA: Italiano

TITOLO: A Hamilton's Principle in Algebraic Geometry

Abstract

In Physics, one learns that the Euler-Lagrange equations of motion are equivalent to Hamilton's variational principle

$$\delta \mathcal{S} = 0.$$

Here is a comparison: In Donaldson-Thomas theory, every moduli space of curves M on a Calabi-Yau threefold is *locally* of the form

$$\{\mathrm{d}f = 0\} \subset X,$$

where f is a holomorphic function on a complex manifold X. In rare situations, $M = \{\mathrm{d}f = 0\}$ is true *globally*. I will try to concretely describe one of these rare situations: the one where the Calabi-Yau is $\mathbf{C}^3$ and the moduli space is $M = \mathrm{Hilb}^n(\mathbf{C}^3)$, the variety of 0-dimensional closed subschemes of affine space.