



Seminario de Geometría y Topología

Conferencia

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título:

"Some contributions on periods of Kontsevich-Zagier and on logarithmic vector fields of line arrangements"

(Tesis leída en cotutela con la Universidad de Pau el 30 de noviembre de 2015)

Abstract:

We are interested in the study of certain interactions between number theory, algebraic geometry and dynamical systems. This talk is composed by two different parts: a first one about **periods of Kontsevich-Zagier** and another one about **logarithmic vector fields on line arrangements**.

Introduced by M.-Kontsevich and D.-Zagier in 2001, **periods** are complex numbers expressed as values of integrals of a special form, where both the domain and the integrand are expressed using polynomials with rational coefficients. The **Kontsevich-Zagier period conjecture** affirms that any polynomial relation between periods can be obtained by linear relations between their integral representations, expressed by classical rules of integral calculus. We present a **semi-canonical reduction** for periods, which allows us to develop a **geometrical approach** for periods and its related problems.

Logarithmic vector fields are an algebraic-analytic tool used to study sub-varieties and germs of analytic manifolds. We are concerned with the case of **line arrangements** in the affine or projective space. One is interested to study how the combinatorial data of the arrangement determines relations between its associated logarithmic vector fields: this problem is known as the **Terao conjecture**. Following the spirit of some classical problems of polynomial differential systems, we give a first study of a **dynamical approach** of the module of logarithmic vector fields of an affine line arrangement.

Fecha: Miércoles, 24 de febrero de 2016

Hora: 12:00 horas

Lugar: Edificio de Matemáticas, Aula 14