

MULTIPLE ZETA VALUES SEMINAR

Miércoles, 22 de octubre de 2014

15:00 h., Aula Gris 2 (ICMat, Campus de Cantoblanco)

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Degenerations of jacobians of
algebraic curves over
high-dimensional bases (part I)

Resumen:

Every non-singular algebraic curve C has a jacobian J , which is an abelian variety. Choosing a point on the curve determines an *Abel-Jacobi* map from C to J . The same constructions can be made in families: given a family of non-singular curves (together with a section), one obtains a family of abelian varieties, and an abel-jacobi map. We are interested in what happens when such a family of non-singular pointed curves degenerates to a singular pointed curve. In the case where the base-space of the family has dimension 1 (a "1-parameter family"), this is completely understood due to work of André Néron in the 1960s. However, when the base space has higher dimension things become more difficult. We describe a seemingly-new combinatorial invariant which controls these degenerations. In particular, we can show both the non-existence of "Néron models" even after alteration of the base, and also the existence of finite-type Néron models after a certain canonical "infinite sequence of blowups" of the base space of the family.