

Departamento de Álgebra, Geometría y Topología (AGT)
Facultad de Ciencias
Universidad de Valladolid

Seminario de Geometría Algebraica y Singularidades (GAS)

Ciclo de Conferencias

Jueves 10 de marzo de 2011 a las 11:00h.

Viernes 11 de marzo de 2011 a las 12:00.

Igor B. Zhukov. Saint Petersburg State University.

On ramification theory in the imperfect residue field case.

Resumen:

The talk includes discussion of approaches to ramification theory for extensions of complete discrete valuation fields with imperfect residue fields. Such extensions occur naturally in the study of finite morphisms of schemes over a field of prime characteristic in dimension ≥ 1 .

We shall give a brief survey of classical ramification theory (perfect residue field case): lower and upper numbering of ramification groups, conductors, relation to class field theory, local-global formulas (Riemann-Hurwitz, Grothendieck-Ogg-Shafarevich) and describe a 2-dimensional generalization of Riemann-Hurwitz formula.

In the general case the corresponding notions and results are still missing; very simple examples showing the nature of difficulties can be presented. We review several approaches made in attempt to overcome these difficulties:

- Theory of elimination of wild ramification.
- Perfection of residue fields.
- Relation to Milnor K-theory via higher class field theory
- Semi-global models and arc spaces

The latter approach leads to new questions related to curve singularities.

Lugar: Departamento de Álgebra, Geometría y Topología.

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Organizador: Santiago Encinas.