

Juan Felipe Ruiz Castrillon (jfruizc@unal.edu.co)

Talk: Strongly Normal Extensions.

Abstract: The goal in this talk is to quickly show the notions and some examples of Δ -coring, strongly normal extension of a Δ -field and generalized strongly normal extension of a Δ -field.

This talk is based on a work joint by the professor David Blázquez-Sanz.

David Molano (dcmolano@math.cinvestav.mx)

Title: Combinatorics of Trees into Free Resolutions

Summary: The ways we can cover a tree by stars can tell us a lot about how to compute a free resolution of its edge ideal. In particular, we can compute all its multigraded Betti numbers that way.

Luis Felipe Lopez Reyes (llopezre@sissa.it)

Title: Non-Generic Isomonodromic Deformations of ODE's

Summary: To every ODE on a Riemann surface one can associate a set of extended monodromy data. Since Riemann, families of ODE's having the same monodromy have been studied and applied in many areas of mathematics and physics. Most of the results concerning such isomonodromic deformations assume some generic conditions on the corresponding families of ODE's. On the other hand there are interesting examples of families in which this generic conditions are not satisfied for some of the parameters.

Michael Wijaya (michael.wijaya@gmail.com)

Title: The Milnor form of a singular point of an algebraic hypersurface

Summary: The Milnor number is a positive integer which measures the complexity of an isolated singular point. I will illustrate a recent generalization which assigns a quadratic form instead of an integer.

Gurvan Mével (gurvan.mével@univ-nantes.fr)

Title: Universal polynomial in enumerative geometry

Summary: Given a surface, when we count curves on it satisfying some properties the result sometimes behave polynomially when the conditions vary and sometimes not. In the case where polynomiality is observed, do there exist polynomials independent of the surface that give the answers?

Manfred Buchacher (manfredi.buchacher@gmail.com)

Title: Separating Variables in Bivariate Polynomial Ideals: the Local Case

Abstract: Let K be an algebraically closed field of characteristic zero and let p be an irreducible polynomial in x and y over K . I will present work in progress on the problem of finding all elements of $K(x) + K(y)$ that are of the form qp for some non-zero rational function q of $K(x,y)$ whose denominator is not divisible by p .

Joaquin Castañeda (joaquin_castaneda@ciencias.unam.mx)

Title: CTLNs defined by tournaments.

Summary: Predicting the dynamical attractors of a network from the graph structure alone is an extraordinarily complicated task. The CTLN theory proposes a set of graphical rules that allow us to predict characteristics of the dynamics from the properties of the graph, enabling us to understand how connectivity shapes the dynamics of real neural circuits.

Santiago Alexis Aguirre Agudelo (saaguirrea@unal.edu.co)

Title: Differential Galois theory and Lie Symmetries.

Abstract. To study the interplay between the differential Galois group and the Lie algebra of infinitesimal symmetries of systems of linear differential equations. We show that some symmetries can be seen as solutions of a hierarchy of linear differential systems. We show that the existence of rational symmetries constrains the differential Galois group in the system in a way that depends of the Maclaurin series of the symmetry along the zero solution.