سمینار هفتگی جبر جابه‌جایی

(زمستان ۱۳۹۴)

۹۴/۱۱/۱ *The Derived Category Analogues of Falting's Local Global Principle and Annihilator Theorems*

مجید زرگر،
دانشگاه محقق اردبیلی

Abstract

Let Z be a specialisation closed subset of $Spec\ R$ and X a homologically bounded complex with finitely generated homologies. We establish Faltings Local-global Principle and Annihilator Theorems for the local cohomology modules $H^i_Z(X)$. Our versions contain variations of results already known on these theorems. This is a joint work with Kamran Divaani-Aazar.

۹۴/۱۱/۸ *Toroidalization of Locally Toroidal Morphisms of 3-Folds*

راضیه احمدیان،
پژوهشگاه دانشهای بنیادی

Abstract

A toroidalization of a dominant morphism $\varphi : X \to Y$ of algebraic varieties over a field of characteristic zero is a toroidal lifting obtained by performing sequences of blowups of nonsingular subvarieties above X and Y. In this talk, we will introduce the problem of toroidalization, and we will discuss our recent proof of toroidalization of locally toroidal morphisms of 3-folds by using methods from embedded resolution of singularities, and resolution of indeterminacy of rational maps. To deal with the latter, we will provide a specific principalization algorithm for locally monomial ideal sheaves on 3-folds.

۹۴/۱۱/۱۵ *A Survey on Weakly Laskerian Rings and Modules*

کامران دیوانی آذر،
دانشگاه الزهرا و پژوهشگاه دانشهای بنیادی

Abstract

This is a report on my ongoing joint work with Kamal Bahmanpour.
Let R be a commutative ring with identity. We investigate some ring-theoretic properties of weakly Laskerian R-modules. Our results indicate that weakly Laskerian rings behave as Noetherian ones in many respects. However, we provide some examples to illustrate the strange behavior of these rings in some other respects.

۹۴/۱۱/۲۹ *Huneke-Wiegand Conjecture for Numerical Semigroup Rings*

راحله جعفری،
دانشگاه خوارزمی و پژوهشگاه دانشهای بنیادی

Abstract

Let R be a one-dimensional Gorenstein domain and M be a non-zero finitely generated R-module which is not projective. It is a conjecture by Huneke and Wiegand (1994), that $M \otimes \mathrm{Hom}(M, R)$ has non-zero torsion elements. This conjecture is widely open even in the case of numerical semigroup rings. In this talk, we translate the conjecture in terms of numerical semigroups and discuss some methods and results in this area.

۹۴/۱۲/۶ *Lyubeznik Numbers, Applications and Next Steps*

مجید اقبالی،
پژوهشگاه دانشهای بنیادی

Abstract

Lyubeznik numbers introduced by G. Lyubeznik in 1993. In this talk we consider their structure, some geometrical and topological information.

۱۳ و ۹۴/۱۲/۲۰ *Polya Fields and Their classification*

بهار حیدریان،
دانشگاه تربیت مدرس

Abstract

The notion of a Polya field, grew out of Polya's study of entire functions with integer-values at integers. Even if restricted to the case of polynomial maps, we get rings with marvelous algebraic properties. A number field is called a Polya field if the module of integer-valued polynomials over its integers has a regular basis. These fields are a generalization of class number one number fields, so their classification is of interest to number theorists. In this talk, after giving some basic definitions, I explain some useful theorems to recognize a Polya field. Some classifications of Polya fields are given based on their Galois groups and their degrees: some Abelian, cyclic and biquadratic (as the simplest non-cyclic) Polya fields will be constructed and we have some theorems to characterize quadratic and cyclic cubic Polya fields.

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