

سمینار هفتگی جبر جابه جایی

(زمستان ۱۳۹۳)

Golod Monomial Ideals ۹۳/۱۰/۲۵

سیدامین سیدفخاری،
پژوهشگاه دانشهای بنیادی

Abstract

In this talk, we introduce the notion of Golod rings and prove its basic properties. We show that the quotient of a polynomial ring by a componentwise linear homogenous ideal I is Golod, provided that I contains no variable. In the case of monomial ideals, we present a combinatorial criterion for Golodness and prove that the product of two proper monomial ideals is Golod. We then show that high symbolic powers of a monomial ideal are Golod.

A short Introduction to the Rational Homotopy Theory ۹۳/۱۱/۲

ابوالقاسم لاله،
دانشگاه الزهرا

Abstract

The homotopy theory is the study of invariants and properties of a topological space and continuous maps on it which only depend on the homotopical types of the space and these maps. The rational homotopy theory deals with the spaces whose homotopy groups are \mathbb{Q} -vector spaces. The computation of homotopy groups, even for a well-behaved space as a sphere, is not an easy task. The homotopy of many topological spaces are not computed yet. In many situations, the rational homotopy theory makes the computation of these groups easier. An approach in rational homotopy theory for computing homotopy groups is using differential forms and connecting them to (commutative) differential graded algebras.

Geometry of Fat Points ۹۳/۱۱/۹

حسن حقیقی،
دانشگاه خواجه نصیرالدین طوسی

Abstract

Let $\{P_1, \dots, P_s\}$ be a set of distinct points in the projective n space \mathbb{P}^n . Let $I(P_i)$ be the ideal of the point P_i in $k[x_0, \dots, x_n]$. Let m_1, \dots, m_s be positive integers. The closed subscheme of \mathbb{P}^n determined by the ideal $I = I(P_1)^{m_1} \cap \dots \cap I(P_s)^{m_s}$, is called a fat point scheme in \mathbb{P}^n . There are many questions in Algebraic Geometry which reduce to questions to fat points. In this talk, we address the problem of determining the dimension of the set of homogeneous polynomials in $k[x_0, x_1, x_2]$ of degree t which vanish to order m_i at $P_i, i = 1, \dots, s$ and the m^{th} symbolic power of the ideal I .

An Overview on a Class of Homological Conjectures (I) ۹۳/۱۱/۱۶
An Overview on a Class of Homological Conjectures (II) ۹۳/۱۱/۳۰

احسان توانفر،
دانشگاه شهید بهشتی

Abstract

Some of the homological conjectures are firstly proved for rings of prime characteristic. Then, subsequently, they have been established for rings of equal characteristic zero by virtue of the method of reduction to prime characteristic. In the first talk, I aim to deal with the proofs of some of the homological conjectures in prime characteristic, in more details. The second talk is devoted to the method of reduction to prime characteristic.

New Intersection Theorem (I) ۹۳/۱۲/۷
New Intersection Theorem (II) ۹۳/۱۲/۱۴

حسین فریدیان،
دانشگاه شهید بهشتی

Abstract

In this talk, I would like to sketch Paul Roberts' elegant proof of the New Intersection Theorem. His proof makes ingenious use of cohomological annihilators, spectral sequences, the Frobenius functor, Hochster's finiteness Theorem, multiplicity theory, and the machinery of Chern classes developed by Grothendieck. The proof is divided into three cases. First the theorem is proved in characteristic p , using cohomological annihilators, the Frobenius functor, and the spectral sequence technology. Next, the case of characteristic zero is established using Hochster's finiteness Theorem. Finally, the remaining mixed characteristic case, is settled using Dutta multiplicity and local Chern characters.

زمان: پنجشنبه ها ساعت ۱۰ الی ۱۲
مکان: میدان شهید باهنر، پژوهشگاه دانشهای بنیادی
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