



## سمینار هفتگی جبر جابه جایی

A Survey of Representation Theory of Algebras ۹۵/۱۰/۱۶

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Abstract

The phrase "representation theory" refers in general to three main areas in algebra: representation theory of associative algebras, representation theory of finite groups, and representation theory of Lie algebras and algebraic groups. It is now known that there are interactions between these research areas through the techniques of homological algebra. Generally speaking, if  $\Lambda$  is an artin algebra over a commutative artinian ring  $R$ , representation theory of  $\Lambda$  involves the study (and characterizations) of the indecomposable objects of  $\text{mod } \Lambda$ , the category of finitely generated modules over  $\Lambda$ , and the homomorphisms between them. The aim of this talk is to bring forward the starting steps in representation theory of algebras, including some of the tools one has in hand, and also some homological algebra. In particular, we will give a very brief introduction of the so-called Auslander-Reiten Theory which plays a very crucial role in the field. Hereditary algebras will also be discussed to some extent.

Transfer Maps and Splitting Some Thom Spectra ۹۵/۱۰/۲۳

هادی زارع  
دانشگاه تهران

Abstract

We recall definition of transfer maps and the applications of it to splitting various spectra; Suitable transfer maps induce trace map well-known to algebraists. This is a report on a joint work with Takuji Kashiwabara.

Rigid Ideals by Deforming Quadratic Letterplace Ideals ۹۵/۱۰/۳۰

امین نعمت بخش  
پژوهشگاه دانشهای بنیادی

Abstract

Given a finite poset  $P$ , the quadratic letterplace ideal  $L(2, P)$  is the ideal generated by all monomials  $x_{1,p_1}x_{2,p_2}$  in the polynomial ring  $S = \mathbb{K}[x_{[2] \times P}]$  where  $p_1 \leq p_2$  in  $P$ . If  $P$  is a poset for which its Hasse diagram is a rooted tree then the first order deformations of  $S/L(2, P)$  are unobstructed. The deformed family has a polynomial ring as the base ring. The ideal  $J(2, P)$  defining the full family of deformations is a rigid ideal and we compute it explicitly. In simple example cases  $J(2, P)$  is the ideal of maximal minors of a generic matrix, the Pfaffians of a skew-symmetric matrix, and a ladder determinantal ideal.

Some Open Conjectures in Algebraic Number Theory Related to Class Groups ۹۵/۱۱/۷

علی رجایی  
دانشگاه تربیت مدرس و پژوهشگاه دانشهای بنیادی

Abstract

In this talk after some basic definitions regarding number fields and their class groups, we discuss some old problems on the size and structure of class groups as well as some techniques developed so far to attack them. Prerequisites are kept to a minimum and no specific prior knowledge of algebraic number theory is presumed.

Simple Normal Crossing Divisors as Toroidal Structures ۹۵/۱۱/۲۱

راضیه احمدیان  
پژوهشگاه دانشهای بنیادی

Abstract

An effective divisor  $D$  on a nonsingular variety  $X$  is simple normal crossing (SNC) if all of its irreducible components are nonsingular, and whenever  $k$  irreducible components of  $D$  meet at a point  $p$ , their local equations can be extended to a regular system of parameters at  $p$ . In this talk, we will explain how an SNC divisor equips a nonsingular variety  $X$  with a toroidal structure. We will try to cover almost all of the geometric prerequisites for the problem. In particular, we will give a brief introduction to toric geometry.

زمان: پنج شنبه ها ساعت ۱۱ الی ۱۲  
مکان: میدان شهید باهر، پژوهشگاه دانشهای بنیادی  
سالن شماره ۱