Seminar/Talk

Discrete and continues duality algebras

Leonid Monin

EPFL, Lausanne

Host: Tamas Hausel

A classical construction associates a Poincar duality algebra to a homogeneous polynomial on a vector space. This construction was used to give a presentation for cohomology rings of complete smooth toric varieties by Khovanskii and Pukhlikov and of some spherical varieties (including full flag varieties) by Kaveh. More recently, motivated by this construction, Brndn and Huh defined Lorenzian polynomials.In my talk, I will recall the above results and will give two recent generalizations of the construction of duality algebras. The first one replaces the homogeneous polynomial by weighted homogeneous polynomial (and more general functions). In contrast to the classical construction, this allows us to construct Poincar duality algebras which are not necessarily generated in degree 1. The second extension is the discrete analogue of the classical construction, which associates an algebra with Gorenstein duality to a polynomial on a lattice (free abelian group). As a corollary, this provides a presentation of K-ring of smooth complete toric varieties as well as full flag varieties.

Wednesday, May 8, 2024 02:00pm - 04:00pm

Office Bldg West / Ground floor / Heinzel Seminar Room (I21.EG.101)