Brownsville Seminar

UTRGV
School of Mathematical & Statistical Sciences

Multiplicative structures on free resolutions

Speaker: Dr. Luigi Ferraro

Abstract

In commutative algebra we study modules over a commutative ring R which are analogues of vector spaces over a field k. Finite dimensional vector spaces are all of the form k^n for some natural number n. It is not true that all finitely generated R-modules are of the form R^n. Modules of the form R^n are called free modules. One way to study a module is to approximate it by free modules. This approximation leads to objects called free resolutions.

Some of these resolutions admit multiplicative structures, turning them into differential graded algebras. When this is the case, this extra structure can be exploited to prove stronger theorems. Of particular interest in this talk will be the minimal resolutions of ideals in the polynomial ring k[x,y,z], where k is a field. Such resolutions always admit a multiplicative structure, and since they are minimal they convey a lot of information about the ideal.

In this talk we will survey the classic results about multiplicative structures on free resolutions and, time permitting, we will talk about some more recent results about minimal free resolutions of ideals in k[x,y,z].

!Coffee and Cookies Will Be Provided!

Date: Friday, March 8th, 2024
Time: 2:00pm - 3:00pm
Room: BLHSB 1.316

Zoom Link: https://utrgv.zoom.us/j/85333215080

For further information or for special accommodations, please contact Dr. Alexey Glazyrin via email alexey.glazyrin@utrgv.edu.
More information about the seminar talks is available at the website https://www.utrgv.edu/math/news-events/seminars/brownsville/index.htm.