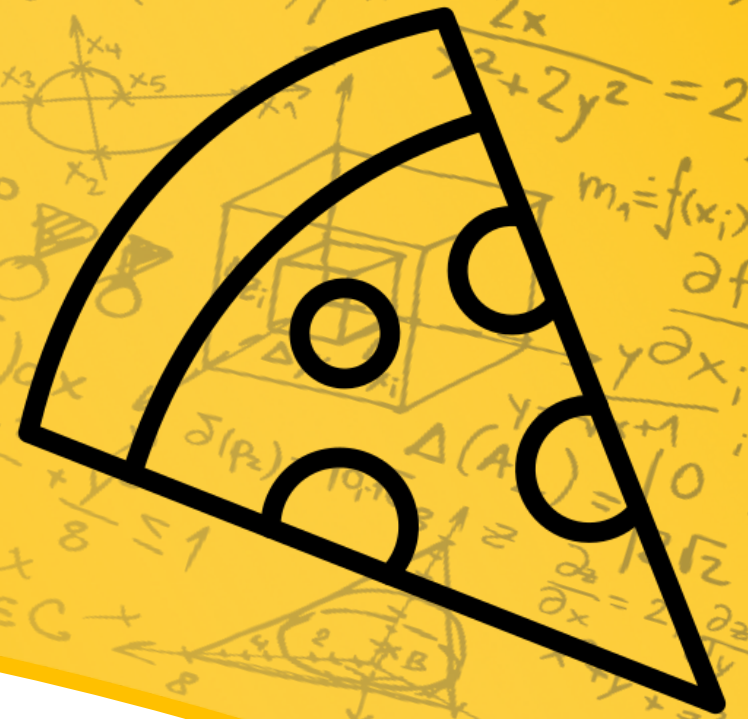




The Faculty of Mathematics
Invites you to the

Pizza seminar



Time &

Wednesday, February 28, 12:30
8th floor lounge, Amado bldg

Title

Classification of noncommutative subvarieties

Speaker

Jeet Sampat (Technion)

Abstract

A corollary of Hilbert's Nullstellensatz is that the quotient algebras of two radical ideals in the ring of (commutative) polynomials in d complex variables are isomorphic to each other if and only if the corresponding varieties are isomorphic, in the sense that there exist polynomial maps between the d -dimensional complex space that restrict to mutually inverse bijections between the corresponding varieties. In this talk, we consider the noncommutative (nc) analogue of the above result and answer the following questions:

When are two nc varieties "isomorphic" to each other? What happens if we replace the ring of complex polynomials with some other algebra of complex nc functions?

We start with a soft introduction to nc function theory and discuss some of the properties that general nc functions share. For the main result, we use a remarkable theorem of Ball, Marx, and Vinnikov about extending nc functions off of subvarieties to show that if the ambient space is "nice enough" then two subvarieties are isomorphic (in the sense that there is a bijective nc map between the subvarieties) if and only if this isomorphism is given by the restriction of an isomorphism between the ambient spaces.