

ALGEBRAIC GEOMETRY AND COMMUTATIVE ALGEBRA SEMINAR

Speaker: Kevin Tucker
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Date: Thursday, October 28, 2021

Time: 2:30 PM

Location: 125 Hayes-Healy Hall

Zoom URL:

Lecture Title:

Splinter rings and Global \pm -regularity

Abstract

A Noetherian ring is a splinter if it is a direct summand of every finite cover. Perhaps owing to their simple definition, basic questions about splinters are often devilishly difficult to answer. For example, Hochster's direct summand conjecture is the modest assertion that a regular ring of any characteristic is a splinter, and was finally settled by André in mixed characteristic more than three decades after Hochster's verification of the equal characteristic case using Frobenius techniques. In this talk, I will discuss some recent work on splinter rings in both positive and mixed characteristics. In particular, inspired by recent work of Bhatt on the Cohen-Macaulayness of the absolute integral closure, I will describe a global notion of splinter in the mixed characteristic setting called global \pm -regularity with applications to birational geometry in mixed characteristic. This is based on joint works arXiv:2103.10525 with Rankeya Datta and arXiv:2012.15801 with Bhargav Bhatt, Linqun Ma, Zsolt Patakfalvi, Karl Schwede, Joe Waldron, and Jakub Witaszek.