

Algebra/Topology Seminar

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FROBENIUS PUSHFORWARDS GENERATE THE BOUNDED DERIVED CATEGORY

Thursday, March 27, 2025
3:00 p.m. in SS-256

ABSTRACT. By now it is classical that one can understand singularities in prime characteristic local algebra/algebraic geometry through properties of the Frobenius endomorphism. A foundational result illustrating this is the celebrated theorem of Kunz characterizing the regularity of a noetherian scheme (in prime characteristic) in terms of whether a Frobenius pushforward on that scheme is flat. In this talk, I'll discuss a structural explanation of, that also recovers, the theorem of Kunz and other theorems of this ilk. Namely, I'll discuss recent joint work with Ballard, Iyengar, Lank, and Mukhopadhyay where we show that over an F -finite noetherian scheme of prime characteristic high enough Frobenius pushforwards generate the bounded derived category.