

Algebraic Geometry Seminar

Distance in free resolutions and iterated socles: constructions and applications

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Abstract: Iterated socles of modules over a local ring are obtained by repeated formations of socles. Iterated socles are ubiquitous, and one of the goals of the talk is to give explicit formulas for the generators of iterated socles in terms of the matrices in a free resolution of the original module. In addition, we obtain bounds on iterated socles using the new notion of distance in free resolutions, which serves as a substitute for degree shifts in resolutions that are not necessarily graded. This circle of ideas has applications to integral closures of ideals, depths of associated graded rings, and resolutions of multiplier ideals.

Wednesday, April 22 at 4:00 PM in SEO 427