

ALGEBRAIC GEOMETRY AND COMMUTATIVE ALGEBRA SEMINAR

Speaker: Eloísa Grifo
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Date: Tuesday, April 27, 2021

Time: 3:00 PM

Location: Zoom

Zoom URL: [notredame.zoom.us/j/97739336655?
pwd=QmUxd3V2Rndyd0VFNlc0RFBxK0xPQT09](https://notredame.zoom.us/j/97739336655?pwd=QmUxd3V2Rndyd0VFNlc0RFBxK0xPQT09)

Lecture Title:
A test module for complete intersections

Abstract

A local ring is regular if and only if every finitely generated R -module has finite projective dimension. Moreover, the residue field k is a test module: k has finite projective dimension if and only if R is regular. This characterization can be extended to a characterization of complexes of R -modules, and phrased in the language of derived categories. Pollitz gave a similar homological characterization for complete intersections, although his characterization lives in the world of complexes. In this talk, we will discuss a return to the world of modules, and embark on a search for a finitely generated module that witnesses the (non-)complete intersection property of R . This is joint work with Ben Briggs and Josh Pollitz.