

1165-13-64

Benjamin Briggs and **Eloísa Grifo***, eloisa.grifo@ucr.edu, and **Josh Pollitz**. *Constructing non-proxy small modules.*

A local ring R is regular if and only if every finitely generated R -module has finite projective dimension. Moreover, the residue field k is a test module: if k has finite projective dimension, then R is regular. This characterization can be extended to the derived category $D^f(R)$, which contains only small objects if and only if R is regular.

Recent results of Pollitz have extended this to complete intersections: R is a complete intersection if and only if every object in $D^f(R)$ is proxy small. In this talk, we will discuss a return to the world of modules, and discuss how one could construct modules that are not proxy small given a ring R that is not a complete intersection. We will see an algorithm that achieves this goal for a large class of rings, including equigenerated rings R . (Received January 04, 2021)