

Non-commutative resolutions

Michel Van den Bergh
Universiteit Hasselt

If R is a local Gorenstein ring then a non-commutative crepant resolution for R is a reflexive R -module M such that the endomorphism ring of M is Cohen-Macaulay as an R -module and has finite global dimension. This turns out to be a sensible generalization of the algebraic geometry concept of a crepant resolution of singularities.

We will give background on non-commutative resolutions and survey some of the existence/non-existence results.