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Gorenstein presentations and semidualizing modules

It is well known that a Cohen–Macaulay local ring admits a dualizing module if and only if it is a homomorphic image of a Gorenstein ring. We augment this result by showing that such a ring admits a nontrivial semidualizing module if and only if it admits a Gorenstein presentation Q/I such that the ideal I has a nontrivial decomposition.

This is ongoing joint work with David Jorgensen and Sean Sather-Wagstaff.