

1015-13-143

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A proof of the following result will be presented: A noetherian commutative local ring  $A$  containing a field is regular if there is a complex  $M$  of free  $A$ -modules with the following properties:  $M_i = 0$  for  $i \notin [0, \dim A]$ ; the homology of  $M$  has finite length;  $H_0(M)$  contains the residue field of  $A$  as a direct summand. A geometric version of this result is an essential component in the proofs of the McKay correspondence in dimension 3 and of the statement that threefold flops induce equivalences of derived categories. (Received February 02, 2006)