1015-13-143 **Tom Bridgeland**, Pure Maths, Hicks Building, University of Sheffield, S3 7RH Sheffield, England, and **Srikanth Iyengar*** (iyengar@math.unl.edu), 203 Avery Hall, Department of Mathematics, University of Nebraska, Lincoln, NE 68588. *A criterion for regularity of local rings.*

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)