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Hailong Dao*, Department of Mathematics, University of Kansas, Lawrence, KS 66049.

Hochster's theta pairing and numerical equivalence.

This is joint work with K. Kurano. Let R be a local hypersurface with an isolated singularity admitting a desingularization. We show that Hochster's theta pairing vanishes on elements in the Grothendieck group that are numerically trivial. As a consequence we show that the counter-example of Dutta-Hochster-McLaughlin to generalized Serre's vanishing exists when R is three dimensional and not a UFD. (Received September 08, 2012)