ALGEBRA AND NUMBER THEORY
SEMINAR

Quadratic forms over the rational function field of a field having cohomological dimension 1

David Leep
University of Kentucky

Abstract: In 2003, Colliot-Thelene and Madore constructed a system of two quadratic forms in 5 variables defined over a field of cohomological dimension 1 having no nontrivial common zero lying in the field. This gave the first counterexample to a claim Armand Brumer made in a 1978 paper. I will briefly explain their counterexample, then greatly generalize the counterexample using techniques from the algebraic theory of quadratic forms, and then give a far simpler proof for the wider class of counterexamples.

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