DIOPHANTINE DEFINITIONS IN FINITELY GENERATED FIELDS IN TERMS OF QUADRATIC FORMS

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I will present a family of existentially definable subsets of finitely generated fields of characteristic not two, given in terms of quadratic forms. Using a cohomological local-global principle as in recent work of F. Pop, one can relate these subsets to various valuations on this field. Ultimately, we obtain strong definability results for all henselian valued fields whose residue field is finitely generated. This also relates to recent work of mine on definability in algebraic extensions of global fields.