1023-11-1313 **Claus Schubert***, UCLA Mathematics Dept., Box 951555, Los Angeles, CA 90095-1555. *Going Up of the u-Invariant over Formally Real Fields.*

The (general) u-invariant is one of the most important field invariants in the algebraic theory of quadratic forms. For a field F of characteristic $\neq 2$, we define $u(F)$ to be the maximum dimension of anisotropic quadratic torsion forms over F (or ∞ if no such maximum exists). One is interested in the behavior of the u-invariant under finite field extensions K/F and says u "goes up" if finiteness of $u(F)$ implies finiteness of $u(K)$, and similarly u "goes down". Using some structure results from the theory of abstract spaces of orderings, we show: if F is a formally real field (i.e., -1 is not a sum of squares) with finite reduced stability $st_r F$, then u goes up for all finite extensions K/F. (Received September 25, 2006)