

1163-14-1197

**Asher Auel\*** ([asher.ael@dartmouth.edu](mailto:asher.ael@dartmouth.edu)), Department of Mathematics, Dartmouth College, Kemeny Hall, Hanover, NH 03755, and **V. Suresh** ([suresh.venapally@emory.edu](mailto:suresh.venapally@emory.edu)), Department of Mathematics, Emory University, Mathematics & Science Center, Atlanta, GA 30322. *The local-global principle for quadratic forms over function fields.*

The Hasse-Minkowski theorem says that a quadratic form over a global field admits a nontrivial zero if it admits a nontrivial zero everywhere locally. Over more general fields of arithmetic and geometric interest, the failure of the local-global principle is often controlled by auxiliary structures of interest, such as torsion points of the Jacobian and the Brauer group. I will explain work with V. Suresh on the failure of the local-global principle for quadratic forms over function fields varieties of dimension at least two in characteristic zero. The counterexamples we construct are controlled by higher unramified cohomology groups and involve the study of Calabi-Yau varieties of generalized Kummer type that originally arose from number theory. Along the way, we need to develop an arithmetic version of a result of Gabber on the nontriviality of certain unramified cohomology classes on products of elliptic curves. (Received September 15, 2020)