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Anna R Haensch* (haenscha@duq.edu), Department of Mathematics and Computer Science, Duquesne University, 600 Forbes Ave., Pittsburgh, PA 15282. *Finding a local-global principle for inhomogeneous quadratic polynomials of rank 3.*

Finding an integral analogue to Hasse's local-global principle for quadratic forms has been a driving force behind much recent work in number theory. For quadratic lattices of rank 3 or greater, Duke and Schulze-Pillot obtained a satisfactory solution in 1990, by way of an asymptotic local-global principle.

In 1994, Joechner and Kitaoka showed that for lattices of rank 4 and greater, these representations approximate a family of local solutions, for finitely many primes. A consequence of the existence of this approximation property, is a local-global principle for inhomogeneous quadratic polynomials of rank 4 and greater.

Towards an ultimate goal of obtaining a local-global principle for ternary inhomogeneous quadratic polynomials, the next interesting step would be to develop an approximation property for ternary quadratic lattices. This talk will describe one method which has been used to approach this problem, using the theory of quadratic lattices and spinor norms. (Received September 08, 2013)