

1086-11-1627      **David Leep\*** (leep@email.uky.edu), Department of Mathematics, University of Kentucky,  
Lexington, KY 40506-0027. *The represented values of a positive definite quaternary quadratic  
form.* Preliminary report.

Let  $q = ax^2 + by^2 + cz^2 + dw^2$  where  $a, b, c, d$  are positive integers. There is a vast literature on the problem of determining which integers are represented by  $q$ . The problem of determining which of these forms represents all but finitely many positive integers has been studied thoroughly. Important contributions have been made by Lagrange, Liouville, Ramanujan, Dickson, Kloosterman, Ross, Pall, as well as more recent authors. This talk will survey some of these results, as well as address some other questions related to this material. (Received September 23, 2012)