1067-11-1564 **Rainer Dietmann*** (Rainer.Dietmann@rhul.ac.uk), Royal Holloway, University of London, Department of Mathematics, Egham, TW20 0EX, England. *Weyl's inequality and systems of quadratic forms.*

Building on earlier work of Birch on forms in many variables, Schmidt has shown that any system of r rational quadratic forms has a non-trivial rational zero, providing that each form in the rational pencil has rank exceeding $2r^2 + 3r$, and providing that there are non-singular real and p-adic zeros. One of the main ingredients in his work is a form of Weyl's inequality from Birch's paper, which we can use more efficiently for systems of forms. This way we are able to replace the bound $2r^2 + 3r$ to $2r^2 + 2r$. In particular, for $r = 1$ one recovers Minkowski's classical result on isotropy of indefinite rational quadratic forms in at least five variables. (Received September 21, 2010)