1011-13-247 **S. M. Bhatwadekar** and **Mrinal K. Das*** (`mdas@math.ku.edu`), Dept. of Mathematics, University of Kansas, 1460 Jayhawk Blvd., Lawrence, KS 66045, and **Satya Mandal**. *Projective modules over smooth real affine varieties.*

Let A be a smooth affine algebra of dimension n over a field k and P be a finitely generated projective A-module of rank n. In the case $k = \mathbf{C}$, the field of complex numbers, a result of Murthy says that P splits off a free summand of rank one if and only if the top Chern class $C_n(P)$ of P in $CH_0(A)$ is zero. However, in the case $k = \mathbf{R}$, the field of real numbers, this result in not true in general. For example, if A is the coordinate ring of an even dimensional real sphere and P is the tangent bundle, then it is well known that P does not split off a free summand of rank one even though $C_n(P) = 0$. Incidentally, all the known examples of projective modules exhibiting such a behaviour are over even dimensional real affine algebras. Therefore, it is natural to ask the following question: *Let A be a smooth affine algebra of odd dimension n over the field of real numbers and let P be a projective A-module of rank n. Does P split off a free summand of rank one if $C_n(P) = 0$?*

In my talk I will mainly focus on this question. (Received August 29, 2005)