1035-13-555　　　　　**Erin E Chamberlain*** (`erin@math.utah.edu`), 155 South 1400 East, JWB 233, Salt Lake City, UT 84112-0090. *Modules with prescribed intersection properties.*

We discuss intersection properties of finitely generated modules over nonregular local rings. Serre defined the intersection multiplicity of finitely generated modules M, N over a ring R, where M has finite projective dimension and $M \otimes_R N$ has finite length, to be $\chi(M, N) = \sum_i (-1)^i \mathrm{length}_R \mathrm{Tor}_i^R(M, N)$. For regular rings the *vanishing property* holds: If $\dim(M) + \dim(N) < \dim(R)$, then $\chi(M, N) = 0$. But this property does not hold for nonregular rings.

Using the Riemann-Roch map, we can get a correspondence between the intersection product on Chow groups and the intersection multiplicity for the modules. This, in turn, results in a correspondence between elements in the kernel of the hyperplane of the Chow group with perfect complexes of R-modules with given supports. In some cases, where the Chow groups are understood, this enables us to construct examples of modules for which the vanishing property does not hold. (Received September 10, 2007)