

Meeting: 998, Houston, Texas, SS 21A, Special Session on Homological Algebra of Commutative Rings

998-13-240 **David Eisenbud*** (de@msri.org), MSRI, 17 Gauss Way, Berkeley, CA 94720. *Geometry of 2-regular algebraic sets*. Preliminary report.

An algebraic subvariety X of dimension d that spans projective r -space must have degree at least $(r-d)+1$. Del Pezzo classified all surfaces achieving the bound, and Bertini extended the result to all dimensions.

These varieties "of minimal degree" may also be characterized as the 2-regular varieties in the sense of Castelnuovo and Mumford. I will describe a classification and geometric description extending the results of del Pezzo and Bertini to the reducible case.

This is from my recent work with Mark Green, Klaus Hulek, and Sorin Popescu (Received February 28, 2004)