

Meeting: 1007, Santa Barbara, California, SS 5A, Special Session on Noncommutative Geometry and Algebra

1007-16-88 **Jason P Bell*** (belljp@umich.edu), Department of Mathematics, University of Michigan, East Hall, 525 E. University Ave., Ann Arbor, MI 48109. *Critical density in varieties*. Preliminary report.

Given a variety X we say that a subset S of X is *critically dense* if the intersection of S with any proper subvariety of X is a finite set. We look at sets S of the form $\{\sigma^n(\mathbf{q}) \mid n \in \mathbb{Z}\}$ in which σ is an automorphism of X and \mathbf{q} is a point in X . We show for many varieties X that if the base field has characteristic 0, then the orbit of the point \mathbf{q} under σ is critically dense if and only if it is Zariski dense. We survey of what is known about this problem and give the varieties for which this result holds. We also discuss what happens in positive characteristic. (Received February 03, 2005)