

1106-VM-1472 **Philip DeOrsey*** (philip.deorsey@ucdenver.edu) and **William Cherowitzo**
(william.cherowitzo@ucdenver.edu). *Cyclotomic Sets in $AG(2, q)$.*

We let $AG(2, q)$ denote the affine plane coordinatized by the finite field with q elements, $GF(q)$. As is well known, the points of $AG(2, q)$ can be represented as elements of $GF(q^2)$. A *cyclotomic set* is an orbit of elements of $GF(q^2)$ under a field automorphism and is thought of as a geometric structure in $AG(2, q)$. We will discuss the structures known to be represented by cyclotomic sets, one of which is a cyclic n_3 configuration. An n_3 configuration is a point-line incidence structure containing n points and n lines, with 3 lines through every point, and 3 points on every line. A configuration is cyclic if there is an automorphism of the configuration that permutes the points in a full cycle. In this talk we determine all generating blocks for cyclic n_3 configurations, which allows us to describe when a cyclotomic set contains a cyclic n_3 configuration. (Received September 13, 2014)