

MATHEMATICS DEPARTMENT
North Carolina State University

ALGEBRA SEMINAR

Friday, April 13, 2007

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Fermat curves on weighted projective planes

ABSTRACT: It is well known that a curve on \mathbb{P}^2 defined by a polynomial of degree d has a genus of $(d-1)(d-2)/2$. In this talk I will find a version of this result for a specific collection of curves on some weighted projective planes. The planes considered will be those where one of the three weights is trivial, $\mathbb{P}(1, m, n)$, while the curves are Fermat-type curves defined by the polynomial $x_0^{amn} + x_1^{an} = x_2^{am}$.

The approach is to use structure of $\mathbb{P}(1, m, n)$ as a toric variety and relate this to the plane's classical construction. Then Hurwitz's Theorem is applied to a map from the curve to \mathbb{P}^1 .

3:00 - 3:50 pm HA 335

Faculty and Students are invited to attend.