



POSTDOCTORAL/GRADUATE STUDENT
SEMINAR SERIES ON L-FUNCTIONS

SPEAKER:

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Topic:

On the Brauer Groups of Certain Weighted Diagonal Surfaces

Let $k = \mathbb{F}_q$ be a finite field of $q = p^n$ elements. Let $Q = (q_0, q_1, q_2, q_3)$ be a quadruplet of positive integers satisfying $p \nmid q_i$ for $0 \leq i \leq 3$. Write $S(Q)$ for the polynomial algebra $k[T_0, \dots, T_3]$ graded by the condition $\deg(T_i) = q_i$. Choose a positive integer m such that $p \nmid m$. Here by a weighted diagonal surface of degree m , we mean a surface in $\mathbb{P}_k^3(Q) := \text{Proj } S(Q)$, the weighted projective 3-space over k of type Q , defined by the equation

$$c_0 X_0^{m_0} + c_1 X_1^{m_1} + c_2 X_2^{m_2} + c_3 X_3^{m_3} = 0$$

where c_i 's are non-zero elements of k and m_i 's are integers such that $q_i m_i = m$ for $0 \leq i \leq 3$. In general, weighted diagonal surfaces are singular surfaces with cyclic quotient singularities; we shall take their minimal resolutions.

In this talk, we shall discuss various fundamental properties of weighted diagonal surfaces. In particular, we shall give a formula for the orders of the Brauer groups of certain weighted diagonal surfaces.

Wednesday, October 13, 1993

3:30 pm, Room 3018

at

The Fields Institute