POSTDOCTORAL/GRADUATE STUDENT
SEMINAR SERIES ON L-FUNCTIONS

SPEAKER:

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On the Topic:

The Number of Solutions of the Thue Inequality

We present some recent work related to the Thue inequality. In particular, we show that if $F(X, Y) = a_0 X^n + a_1 X^{n-1} Y + \cdots + a_n Y^n$ is a binary form with complex coefficients having degree $n \geq 3$ and discriminant $D_F \neq 0$, and if A_F is the area of the region $|F(x, y)| \leq 1$ in the real affine plane, then

$$|D_F|^{1/n(n-1)} A_F \leq 3B \left(\frac{1}{3}, \frac{1}{3} \right) \approx 15.9$$

where $B(\frac{1}{3}, \frac{1}{3})$ denotes the Beta function with arguments of $1/3$. We then discuss how this result can be applied in the enumeration of solutions of the Diophantine inequality $|F(x, y)| \leq h$ and we formulate several conjectures concerning the nature of A_F.

Thursday, December 2, 1993
3:30 pm, Room 3018
at
The Fields Institute