

## POSTDOCTORAL/GRADUATE STUDENT SEMINAR SERIES ON L-FUNCTIONS

## **SPEAKER:**

## MICHAEL BEAN University of Toronto and The Fields Institute

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  $F(X,Y) = a_0X^n + a_1X^{n-1}Y + \cdots + a_nY^n$  is a binary form with complex coefficients having degree  $n \ge 3$  and discriminant  $D_F \ne 0$ , and if  $A_F$  is the area of the region  $|F(x,y)| \le 1$  in the real affine plane, then

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

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

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