Department of Mathematics and Computer Science

Friday, February 21, 2014, 4:00

SPECIAL COLLOQUIUM TALK

Speaker: Andy Parrish

St. Louis University

Old Main 2231

Diophantine Approximation for Translation Surfaces

Abstract:

Suppose $\psi_i(n) : \mathbb{N} \to \mathbb{R}, 1 \leq i \leq d$ are non-negative functions and that

$$\psi(n) = \prod_{i=1}^{d} \psi_i(n)$$

is monotonically decreasing.

In 1960, Wolfgang Schmidt showed that the number of solutions of the system of inequalities,

$$0 \leq \theta_i n - p_i \leq \psi_i(n),$$

with $1 \leq n \leq h$ is on the order of $\sum_{n=1}^{h} \psi(n)$ while also giving an estimate on the size of the error term.

Our goal in this talk will be to prove a much-weakened version of Schmidt's theorem using only the pointwise ergodic theorem and the Siegel mean value theorem. We will then show how this method may be adapted to the setting of translation surfaces.

(joint work with Jayadev Athreya and Jim Tseng)

SNACKS IN FACULTY LOUNGE AT 3:30 PM.
EVERYONE WELCOME (EVEN IF YOU ARE UNABLE TO ATTEND THE TALK)