



The Mathematics Department Student Colloquium

presents talks delivered by Charles Conley

$$f(x) = x^{2^{2^{2^{\dots}}}}$$

—Tuesday, Nov. 3, 2009, 12:40-1:30—

313 Design Building

Light lunch in Keisler Lounge: 12:00 to 12:30 pm

For what real numbers x does this function make sense? This question was first answered by Euler. Clearly $f(2)$ is infinite, and one might guess that $f(x)$ is infinite for all x greater than 1. In fact this is not true: both the upper and lower bounds of f 's domain of definition are interesting. In this talk we will deduce these bounds using nothing more advanced than the chain rule. En route we will examine some well-known graphs ($y = a^x$) and some not-so-well-known graphs ($y = a^{a^x}$) closely, discovering some enjoyable surprises.

Vector Fields on the Line

—Wednesday, Nov. 4, 2009, 3:40-4:30 —

Lockett 285

Refreshments in Keisler Lounge: 3:00 to 3:30 pm

This talk will be a gentle introduction to some aspects of the theory of representations of Lie algebras by means of an example: the Lie algebra $\text{Vec}(\mathbb{R})$ of vector fields on the line. Since the objects involved are quite concrete, no prior knowledge of Lie algebras will be assumed: only basic calculus and linear algebra.

Charles Conley



Dr. Conley received his Ph.D. from the University of California at Los Angeles and is currently an Associate Professor at the University of North Texas where he conducts research on two types of complex Lie algebras: finite dimensional semisimple Lie algebras, and infinite dimensional Lie algebras of vector fields such as the Virasoro Lie algebra .

Professor Conley's office: to be announced

Be sure to bring a friend!