

University of Notre Dame Department of Mathematics

COLLOQUIUM

David Ben McReynolds

University of Chicago

Will give a lecture entitled:

Bertrand's postulate on linear groups.

On

Tuesday, January 25, 2011

At

4:00 PM

In

129 Hayes-Healy Hall

Abstract

It happens often in geometry that one would like to control the geometry of a finite cover (in some sense). Once we know that this control is possible, we might try to optimize the degree of the needed cover. The example of ensuring a specific closed geodesic fails to lift to a cover leads us to functions that quantify the residual finiteness of the fundamental group of the given manifold. The asymptotic and average behavior of these functions are the central topic of this talk, where we will primarily focus on the average behavior. In order to show that these functions have finite averages (i.e., are integrable), we are lead to a generalization of Bertrand's postulate for linear groups. We will focus on a simple example where the main tools required are freshman calculus. This work is joint with Khalid Bou-Rabee.