



# Algebra/Topology Seminar

MAHDI ASGARI

Oklahoma State University and Cornell University

COUNTING CUSP FORMS

Thursday, February 16, 2012

1:15 p.m. in ES-143

(tea & coffee at 12:45 p.m. in ES-152)

ABSTRACT. Cusp forms on a (reductive or semisimple) algebraic group, such as  $SL(n)$ , are very basic objects in Number Theory. Until a few years ago it was not known that there are infinitely many cusp forms on a group such as  $SL(n)$  beyond very small values of  $n$ . One way to count cusp forms is in terms of their associated eigenvalue with respect to certain invariant differential operators (such as the Laplacian) on the corresponding locally symmetric space. Weyl's law refers to an asymptotic formula for the number of cusp forms on a given connected reductive group, in particular establishing their infinitude.

I will discuss some work-in-progress, joint with Werner Müller of University of Bonn, establishing Weyl's law with remainder terms for classical groups. Without remainder terms, Weyl's law was recently established by Lindenstrauss and Venkatesh in a rather general setting.