

Mathematics Colloquium

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**Harmonic Analysis on
Spherical Varieties and
the Langlands Program**

Abstract: Harmonic analysis on reductive Lie and p -adic groups would be a subject quite independent from number theory, if it wasn't for the local Langlands conjectures which predict that irreducible representations of $G(k)$ (where k : real, complex or p -adic field, G : reductive algebraic group over k) can be described, roughly, in terms of Galois representations into the “dual group” of G . A reductive group is a special case of a symmetric and, more generally, a spherical space, and the purpose of this talk is to describe a program aimed at generalizing the Langlands correspondence to the case of spherical varieties. If time permits, I will relate this to questions about periods of automorphic forms and L -functions. No prior familiarity with the Langlands program will be assumed, and basic notions of non-abelian harmonic analysis, as well as the algebro-geometric theory of spherical varieties, will be reviewed.

Wednesday, December 2

**4:00-5:00 pm
204 Smith Hall**