

Mathematics Colloquium

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IAS

**Relative Representation
Theory of Reductive
Groups Over Close Local
Fields with Applications
to Gelfand Pairs**

Abstract: First I will present a geometric method, due to Kazhdan, of approximating representation theory of reductive groups over local fields of positive characteristic (like $F_p(t)$) with representation theory of reductive groups over local fields of zero characteristic (like the field Q_p of p -adic numbers).

Then I will present a generalization of this method to “representation theory of pairs of groups”, due to Aizenbud, Avni and myself.

As an application we show that $(GL(n+1, F), GL(n, F))$ is a strong Gelfand pair for all local fields F of positive characteristic. This means that the restriction to $GL(n, F)$ of every irreducible smooth representation of $GL(n+1, F)$ “decomposes” with multiplicity one. We use our method to deduce this from the zero characteristic case, which was proven two years ago by Aizenbud, myself, Rallis and Schiffmann.

Wednesday, October 21

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