Talk of J.-L. Waldspurger

Title : an integral formula related to the local Gross-Prasad conjecture.

Abstract. Let F be a p-adic field. We consider the groups $G' = SO(N,F)$ and $G = SO(N+1,F)$ and we suppose given a suitable embedding $G' \to G$. Let π', resp. π, be an admissible irreducible representation of G', resp. G. We define $m(\pi,\pi') = dim(Hom_{G'}(\pi,\pi'))$. An old result of Rallis say that $m(\pi,\pi')$ is equal to 0 or 1. Suppose that π is cuspidal and π' is tempered. Then we prove an integral formula that computes $m(\pi,\pi')$ in terms of the characters of π and π'.

Let Π', resp. Π, be an L-packet of tempered representations of G', resp. G (here we use the sophisticated notion of L-packet introduced by Vogan). A weak form of the Gross-Prasad conjecture asserts that there exist a unique pair $(\pi,\pi') \in \Pi \times \Pi'$ such that $m(\pi,\pi') = 1$. Suppose that all the representations in Π are cuspidal and suppose that certain expected properties of L-packets are true. Then our integral formula implies this weak form of the conjecture.