

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 $G' \rightarrow G$. Let π' , resp. π , be an admissible irreducible representation of G' , resp. G . We define $m(\pi, \pi') = \dim(\text{Hom}_{G'}(\pi, \pi'))$. 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.