

Comparison of local spherical characters and the Ichino-Ikeda conjecture for unitary groups

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Abstract

The global Gan-Gross-Prasad conjectures relate the non-vanishing of certain automorphic periods to the non-vanishing of central special values of L -functions. These conjectures have been refined by Ichino-Ikeda and N.Harris into exact formulas involving the relevant L -functions and the square of the absolute value of the corresponding periods. In his seminal work, Wei Zhang has proved both conjectures for cuspidal automorphic representations of unitary groups satisfying certain local conditions. These local conditions are actually far more stringent for the Ichino-Ikeda conjecture than for the Gan-Gross-Prasad conjecture and Zhang has stated a local conjecture which, if true, would allow to relax most of these restrictions. In this talk, I shall present a proof of this conjecture for all p -adic fields. The main tools of the proof are certain local analogues of the so-called Jacquet-Rallis trace formulas, which have played a prominent role in the work of Zhang, together with some "truncated" local expansions of relative characters which have been obtained previously by Zhang.