

Title : On Twisted Endoscopy and the Generic Packet Conjecture

Abstract : Let k be a p -adic field, $p > 2$. Let \mathbf{G} be a connected reductive group over k , θ a quasi-semisimple automorphism of \mathbf{G} defined over k of order r with $(r, p) = 1$, and $\mathbf{a} \in H^1(W_k, Z(\hat{G}))$. Let $(\mathbf{H}, {}^L H, s, \xi)$ be a twisted endoscopic datum for $(\mathbf{G}, \theta, \mathbf{a})$. Suppose that \mathbf{G} is quasi-split over k , θ preserves a k -splitting of \mathbf{G} and $\omega|_{(\mathbf{G}^\theta)^0(k)} = 1$ where ω is the quasi-character on $\mathbf{G}(k)$ associated to \mathbf{a} . We prove that if an L -packet Σ on \mathbf{H} transfers to an L -packet Π on \mathbf{G} via twisted endoscopy, where Π is singleton and generic, then Σ is generic as well. This has been proved in many cases by Takuya Konno, but the present work is more general as it deals with (θ, ω) -twisted endoscopy and doesn't require the transfer factors to be simple. The proof also differs as it proceeds by replacing certain (θ, ω) -twisted orbital integrals on $\mathbf{G}(k)$ by $(\omega$ -twisted) orbital integrals on $(\mathbf{G}^\theta)^0(k)$.