A bridge between p-adic and quantum group representations via Whittaker coinvariants.

Abstract:

Unramified principal series representations of $p$-adic $GL(r)$ and its metaplectic covers are important in the theory of automorphic forms. I will present a method of relating the Whittaker coinvariants of such a representation with representations of quantum affine $gl_n$. This involves using a Schur-Weyl duality result due to Chari and Pressley and it allows us to compute the dimension of the Whittaker model of every irreducible smooth representation with Iwahori fixed vectors.

If time permits I will explain a conjectured version of this result for the symplectic group $Sp(2r)$ which involves quantum symmetric pairs.