Abstract:

The celebrated Gan-Gross-Prasad conjectures aim to describe the branching behavior of representations of classical groups, i.e., the decomposition of irreducible representations when restricted to a lower rank subgroup.

These conjectures, whose global/automorphic version bear significance in number theory, have thus far been formulated and resolved for the generic case.

In this talk, I will present a newly formulated rule in the $p$-adic setting (again conjectured by G-G-P) for restriction of representations in non-generic Arthur packets of $GL_n$.

Progress towards the proof of the new rule takes the problem into the rapidly developing subject of quantum affine algebras. These techniques use a version of the Schur-Weyl duality for affine Hecke algebras, combined with new combinatorial information on parabolic induction extracted by Lapid-Minguez.