

The existence and uniqueness of Whittaker functionals for $GL(n, \mathbb{R})$: an algebraic-geometric proof

The “multiplicity-one theorem” proved by Piatetski-Shapiro and Shalika, asserts that the space of Whittaker functionals on unitary irreducible representations of $GL(n, \mathbb{R})$ is at most one-dimensional. In this talk, we discuss a new, algebraic-geometric proof that the space of Whittaker functionals on principal series representations of $GL(n, \mathbb{R})$ is exactly one-dimensional. Additionally, we discuss its possible applications on Jacquet integrals.