RSEARCH PLAN

Current Research Projects

Let G be a reductive group over $\mathbb{Q}$ and H its subgroup. I will study a relationship between automorphic L-functions coming from the branching rule for automorphic representations of G and H.

For more precise explanation, let G_n denote the quasi-split unitary group of degree n. My purpose is to establish a relationship between the standard L-functions associated with holomorphic cusp forms of $G_n(\mathbb{A})$ and $G_{n+1}(\mathbb{A})$ coming from the branching rule. If we find such a relationship, we can study the standard L-function of G_n inductively on degree n.

To achieve this, I will study the theory of zeta integral of Murase–Sugano type for (G_{n+1}, G_n). My research plan is outlined below:

1. Prove an explicit formula of Shintani functions for (G_{n+1}, G_n) at finite places.

2. Prove an explicit formula of Shintani functions for (G_{n+1}, G_n) at real place.

3. Prove an nearly holomorphy of the Eisenstein series of the unitary group.

Therefore, by pursuing this research plan, I aim to establish a relationship between the standard L-functions associated with holomorphic cusp forms of $G_n(\mathbb{A})$ and $G_{n+1}(\mathbb{A})$ and to contribute to the understanding of automorphic L-functions.