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Lei Zhang* (zhang423@umn.edu). *Automorphic Forms on Certain Symplectic Pairs*. Preliminary report.

In this talk, we consider automorphic periods associated to the symmetric pairs $(\mathrm{Sp}_{4n}, \mathrm{Res}_{K/k}\mathrm{Sp}_{2n})$ and $(\mathrm{GSp}_{4n}, \mathrm{Res}_{K/k}\mathrm{GSp}_{2n})$, where k is a number field and K is an Étale algebra over k of dimension 2. We consider the period integral of a cusp forms of $\mathrm{Sp}_{4n}(\mathbb{A}_k)$ against with an Eisenstein series of the symmetric subgroup $\mathrm{Res}_{K/k}\mathrm{Sp}_{2n}$, and expect to establish an identity between this period integrals and the special value of L -functions.

In the local theory, using Aizenbud and Gourevitch's generalized Harish-Chandra method and the Gelfand-Kahzdan theorem, we can prove that these symmetric pairs are Gelfand pairs when K_v is a quadratic extension field over k_v for any n , or K_v is isomorphic to $k_v \times k_v$ for $n \leq 2$. Furthermore, according to the Yu' construction of irreducible tame supercuspidal representations and the dimension formula given by Hakim and Murnaghan, we give sufficient and necessary conditions of generic cuspidal data such that the corresponding tame supercuspidal representations are H -distinguished, for the symmetric pair $(\mathrm{Sp}_{4n}(k_v), \mathrm{Sp}_{2n}(K_v))$. (Received June 22, 2011)