

Refining the Langlands correspondence for symplectic motives

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Langlands conjecturally associates to a discrete, symplectic motive of rank $2n$ a generic, automorphic representation of the split orthogonal group $SO(2n+1)$ which appears with multiplicity one in the cuspidal spectrum. Using the local theory of generic representations of odd orthogonal groups, we define a new vector in this adelic representation, which is the tensor product of local test vectors for the Whittaker functionals. I hope that the defining properties of this new vector will make it easier to investigate the Langlands correspondence computationally, especially for the cohomology of algebraic curves. Our refinement is similar to the one that Weil proposed for the modularity of elliptic curves.