

**Anandavardhanan, U.K.; Prasad, Dipendra****A local-global question in automorphic forms. (English)** Zbl 1329.11050**Compos. Math. 149, No. 6, 959-995 (2013).**

Summary: In this paper, we consider the  $SL(2)$  analogue of two well-known theorems about period integrals of automorphic forms on  $GL(2)$ : one due to Harder-Langlands-Rapoport about non-vanishing of period integrals on  $GL_2(\mathbb{A}_F)$  of cuspidal automorphic representations on  $GL_2(\mathbb{A}_E)$  where  $E$  is a quadratic extension of a number field  $F$ , and the other due to Waldspurger involving toric periods of automorphic forms on  $GL_2(\mathbb{A}_F)$ . In both these cases, now involving  $SL(2)$ , we analyze period integrals on global  $L$ -packets; we prove that under certain conditions, a global automorphic  $L$ -packet which at each place of a number field has a distinguished representation, contains globally distinguished representations, and further, an automorphic representation which is locally distinguished is globally distinguished.

**MSC:**

Cited in 2 Documents

- 11F70 Representation-theoretic methods in automorphic theory  
22E55 Representations of Lie and linear algebraic groups over global fields and adèle rings

**Keywords:**

period integrals; locally distinguished representations; globally distinguished representations; base change; Asai lift; Asai  $L$ -function; central  $L$ -values; epsilon factors; fibers of functorial lifts; simultaneous non-vanishing of  $L$ -functions

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