

## On the images of the Galois representations attached to generic automorphic representations of $\mathrm{GSp}(4)$

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**Abstract.** By making use of Langlands functoriality between  $\mathrm{GSp}(4)$  and  $\mathrm{GL}(4)$ , we show that the images of the Galois representations attached to “genuine” globally generic automorphic representations of  $\mathrm{GSp}(4)$  are “large” for a set of primes of density one. Moreover, by using the notion of  $(n, p)$ -groups (introduced by Khare, Larsen and Savin) and generic Langlands functoriality from  $\mathrm{SO}(5)$  to  $\mathrm{GL}(4)$  we construct automorphic representations of  $\mathrm{GSp}(4)$  such that the compatible system attached to them has large image for all primes.

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