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**Daniel R Moore\*** ([moore@math.osu.edu](mailto:moore@math.osu.edu)). *Revisiting the Tensor Product Theorem for Smooth Automorphic Representations.*

Let  $G = \mathbb{G}(\mathbb{A}_k)$  for  $k$  a global field,  $\mathbb{G}$  a reductive algebraic group defined over  $k$ , and  $\mathbb{A}_k$  the adèle ring of  $k$ . We will define the notion of smooth automorphic forms and automorphic representations on the former. In analogy with the lifting of  $(\mathfrak{g}, K)$ -modules to their Casselman-Wallach globalizations in the theory of real reductive groups, we introduce a certain convolution algebra  $\mathcal{S}(G)$  of “Schwartz functions” on  $G$  and describe an equivalence of categories between smooth automorphic representations of  $G$  and “admissible”  $\mathcal{S}(G)$ -modules. The algebra  $\mathcal{S}(G)$  decomposes into a tensor product of analogous algebras  $\mathcal{S}(G_v)$  over the places  $v$  of  $k$ , and this permits us to discuss a tensor product theorem for admissible  $\mathcal{S}(G)$ -modules and, hence, for smooth automorphic representations, showing that every such representation  $\pi$  factors into a tensor product  $\otimes_v \pi_v$  of representations of the groups  $\mathbb{G}(k_v)$ . Our talk will be introductory in nature with a goal of introducing smooth automorphic representations to the audience for the first time. (Received August 30, 2016)