Number of irreducible representations in the cuspidal automorphic spectrum

Abstract:

Let $G$ be a reductive group defined and deployed over a global function field. We are interested in the sum of multiplicities of irreducible representations containing a regular depth zero representation of $G(O)$, where $O$ is the ring of integral adeles, in the automorphic cuspidal spectrum. The sum is given in terms of the number of $\mathbb{F}_q$-points of Hitchin moduli spaces of groups associated to $G$. When $G=GL(n)$, it implies some cases of a conjecture of Deligne by Langlands correspondence. In this talk, I will mainly focus on the case of $GL(n)$.