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Almost unramified automorphic representations for split groups over $F_q(t)$

Let G be a split reductive group over a finite field \mathbf{F}_q . Let $F = \mathbf{F}_q(t)$ and \mathbf{A} be the adèles of F . We describe the local constituents at each valuation of F of all the irreducible representations of $G(\mathbf{A})$ that occur discretely in $L^2(G(F)\backslash G(\mathbf{A}))$ and have non-zero vectors invariant under the compact open subgroup K of $G(\mathbf{A})$ which is a product Iwahori subgroups at two valuations of F and maximal compact subgroups at all the other valuations.

This is done by showing, firstly, that the space generated by the representations mentioned above is spanned by residues of Eisenstein series associated to an unramified automorphic characters of a maximal split torus of G . This imposes consistency conditions on the local constituents at different valuations of a fixed automorphic representation. An earlier result of the speaker describes the local constituents of the aforementioned representations at the two places where the local factor of K is Iwahori. This, together with the consistency conditions uniquely determines the local constituents at all places of the automorphic representation.