

Tempered representations and K-theory



Contribution ID: 10

Type: **not specified**

K-Theory and Langlands duality

Thursday, February 27, 2025 9:30 AM (1 hour)

Let G be a compact connected semisimple Lie group. We will describe the Langlands dual group G^\vee . We now have two extended affine Weyl groups, one for G and one for G^\vee . We will compare the C -algebras of these two discrete groups, and show that they have the same K -theory. In this sense, Langlands duality is an invariant of K -theory.

With the aid of the equivariant Chern character of Baum-Connes, we will compute this K -theory for $SU(n)$ and the exceptional Lie group E_6 . As an application, we will compute the K -theory of the Iwahori-spherical C -algebra of the p -adic version of E_6 . The spectrum of this C^* -algebra comprises irreducible tempered representations of E_6 which admit a nonzero Iwahori-fixed vector. From the point of view of noncommutative geometry, we are computing the K -theory of this spectrum.

Presenter: PLYMEN, Roger