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Twisted equivariant K-theory of compact Lie group actions with maximal rank isotropy

We consider twisted equivariant K–theory for actions of a compact Lie group G on a space X where all the isotropy subgroups are connected and of maximal rank. We show that the associated rational spectral sequence à la Segal has a simple E_2-term expressible as invariants under the Weyl group of G. Namely, if T is a maximal torus of G, they are invariants of the $\pi_1(X^T)$-equivariant Bredon cohomology of the universal cover of X^T with suitable coefficients. In the case of the inertia stack ΛY this term can be expressed using the cohomology of Y^T and algebraic invariants associated to the Lie group and the twisting. A number of calculations will be provided; in particular, we recover the rational Verlinde algebra when Y is a point. This is joint work with José Manuel Gómez and José María Cantarero.