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Wayne A Johnson* (wayne.johnson@westminster-mo.edu). *Exponential Hilbert series of equivariant embeddings.*

Let G be a semisimple, simply-connected linear algebraic group over \mathbb{C} . We study G -equivariant embeddings of projective varieties by considering an exponential version of the classical Hilbert series. We show that, for any such embedding, the exponential Hilbert series converges to the product of a rational polynomial, $p(x)$, and an exponential term. We give a combinatorial formula for the coefficients of $p(x)$, and show that it encodes both representation-theoretic information about G and algebro-geometric data about the embedding. In particular, we show that the linear coefficient of $p(x)$ is one less than the dimension of a particular finite-dimensional, irreducible representation of G and the highest order term encodes both the degree of the embedding and the dimension of the projective variety. (Received January 28, 2019)