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**APOORVA KHARE**, Stanford University

*The Weyl-Kac weight formula*

We provide the first positive formulas (without cancellations) for the weights of non-integrable simple highest weight modules over Kac-Moody algebras. For generic highest weights, we also present a formula for the weights that is similar to the Weyl-Kac character formula. For the remaining highest weights, the formula fails in a striking way, suggesting the existence of "multiplicity-free" Macdonald identities for affine root systems.