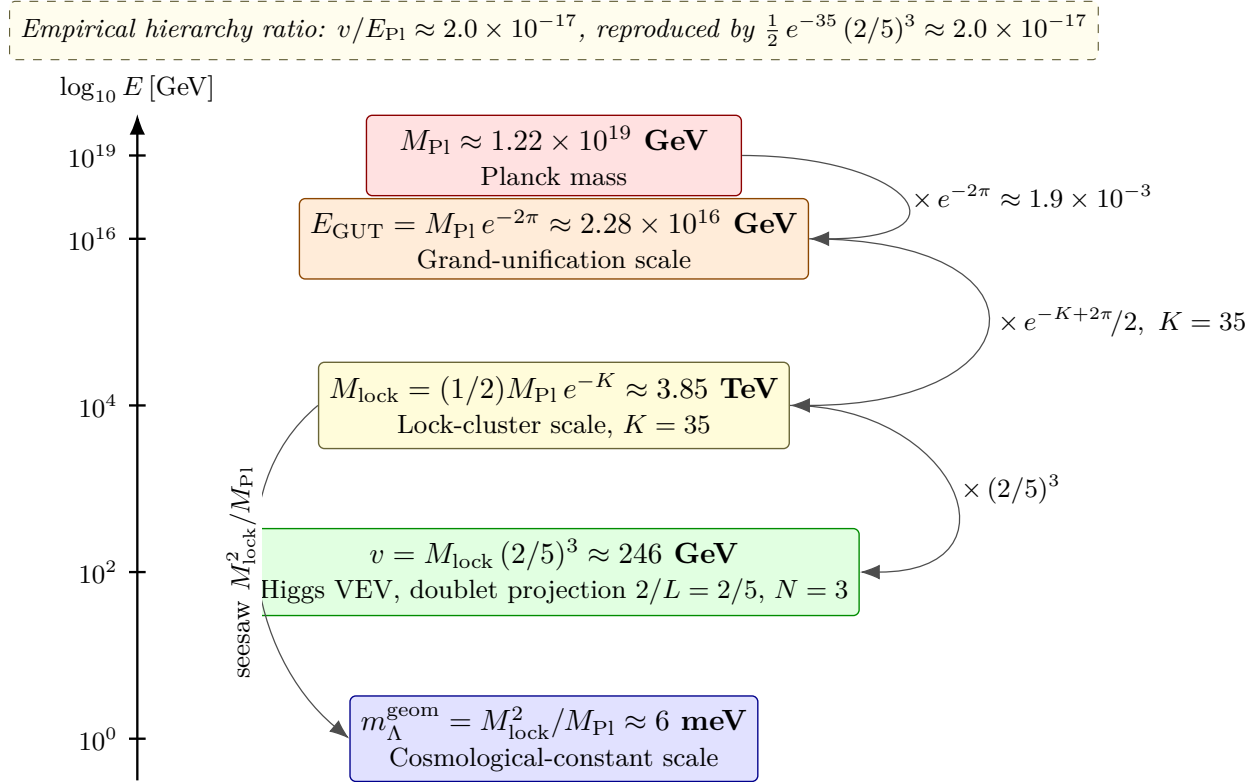


Thirty-Three Orders of Magnitude — and Not One Continuous Parameter



Where the scales come from. Five energy scales are linked by closed-form expressions built from two scale-profile exponentials, $e^{-2\pi}$ and e^{-K} , and the OGN-5 integers $K = 35$, $L = 5$, $N = 3$. No continuous parameter appears anywhere on the ladder. From the top: the Planck mass is the input scale; the grand-unification scale follows from it; the lock-cluster scale at 3.85 TeV is the framework's principal LHC-era prediction, developed in full in GG-P1-KK; the Higgs vacuum expectation value at 246 GeV reproduces the measured electroweak scale; and the lock-scale seesaw against the Planck mass lands within an order of magnitude of the empirical dark-energy density. Thirty-three orders of magnitude are spanned by exponentials of small integers, with no fine-tuning anywhere — which is interesting, and is not proof. The closing step is the one to check first. In full: Figure 7, p. 124.