

Data-Anchored Two-Pager — Physical Units

Break frequency (from PTA): $f_{\text{br}} \approx 7.07\text{e-}09$ Hz. Planck-2018 prior: $\Delta N_{\text{eff}} \approx -0.06$ (posterior peak).

Calibration: $g_* = 106.75$; $K = 1.65\text{e-}7 * (30/(\pi^2 g_*))^{1/4} = 6.78\text{e-}08$ Hz/GeV.

Inferred brane tension scale: $\lambda^{1/4} \approx 1.043\text{e-}01$ GeV; $\lambda \approx 1.182\text{e-}04$ GeV⁴.

(Absolute normalization can be refined with the exact frequency-temperature map used in your chosen convention; this is the standard estimate.)

Posteriors + GW Context

