

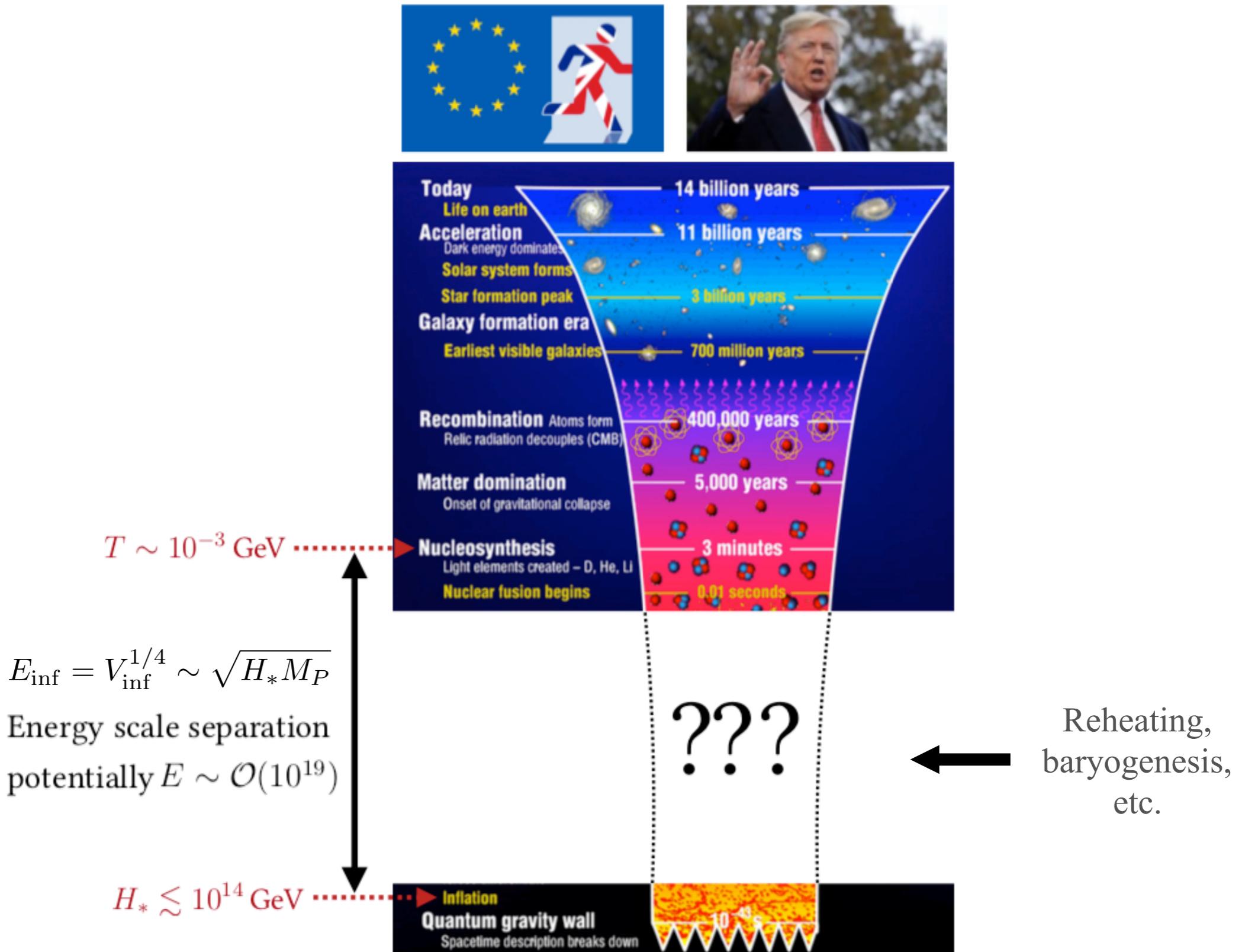
Ricci Reheating

Ben A. Stefanek

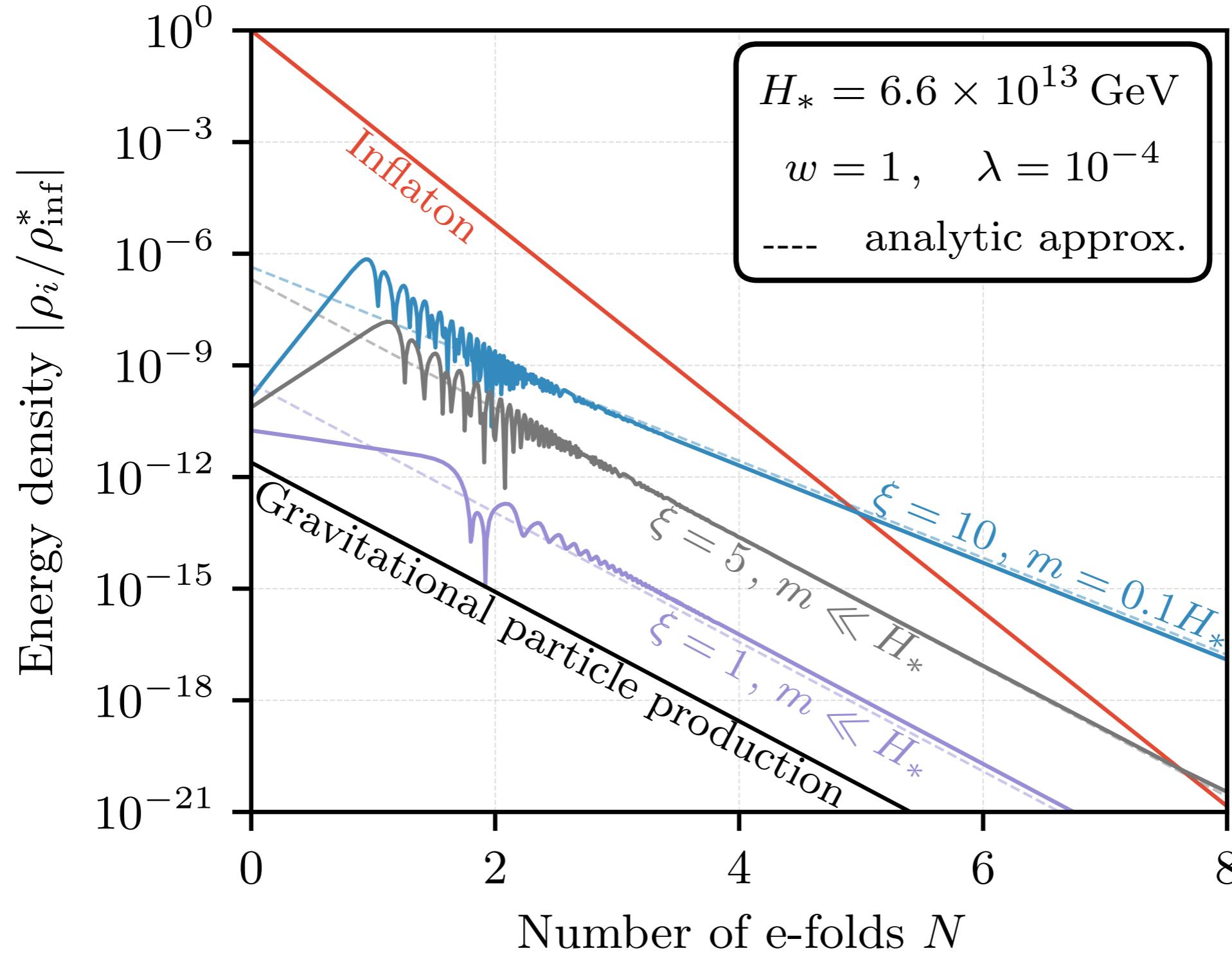


Ricci Reheating
T. Opferkuch, P. Schwaller, BAS
arXiv:1905.06823

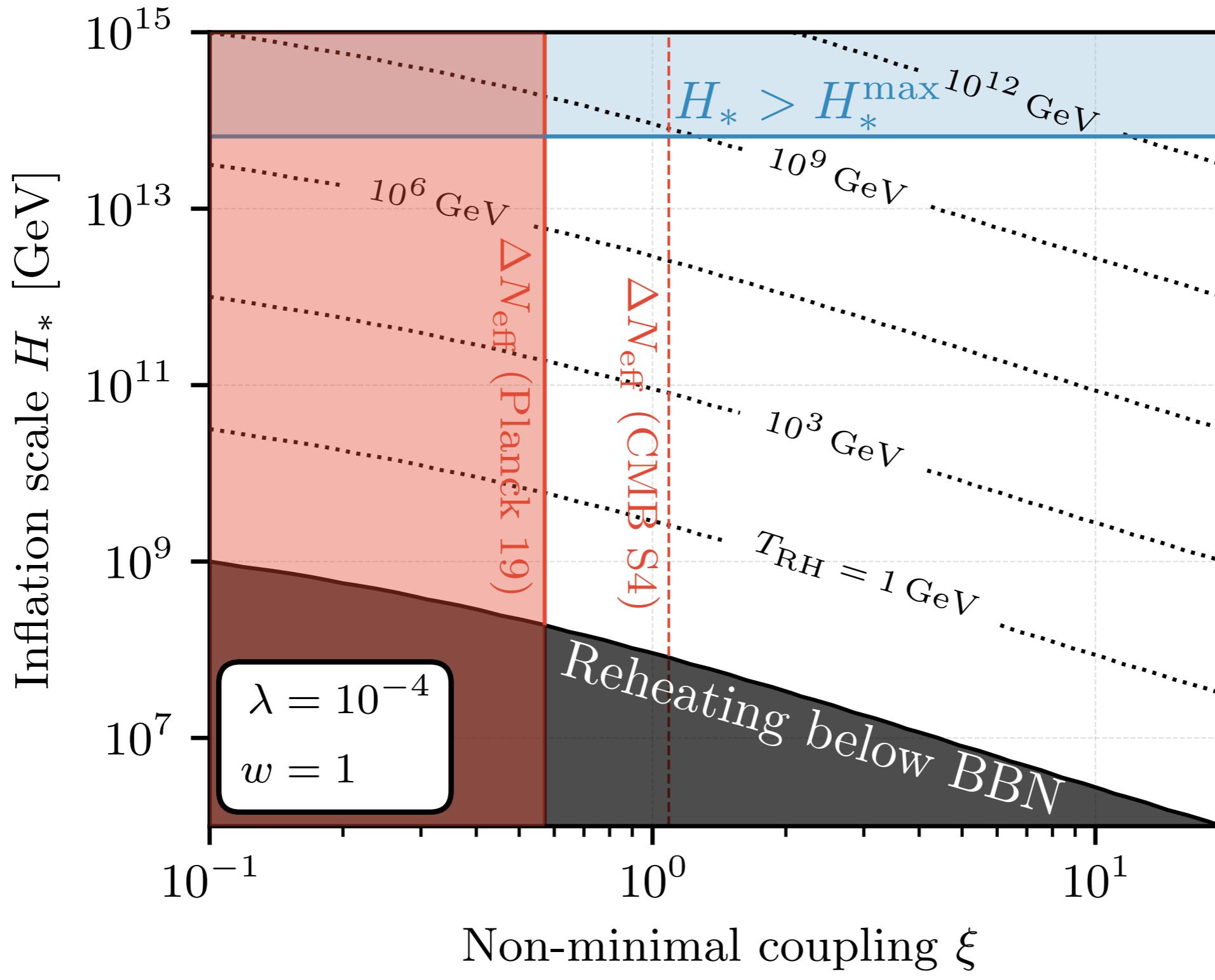
What do we know about the early universe?



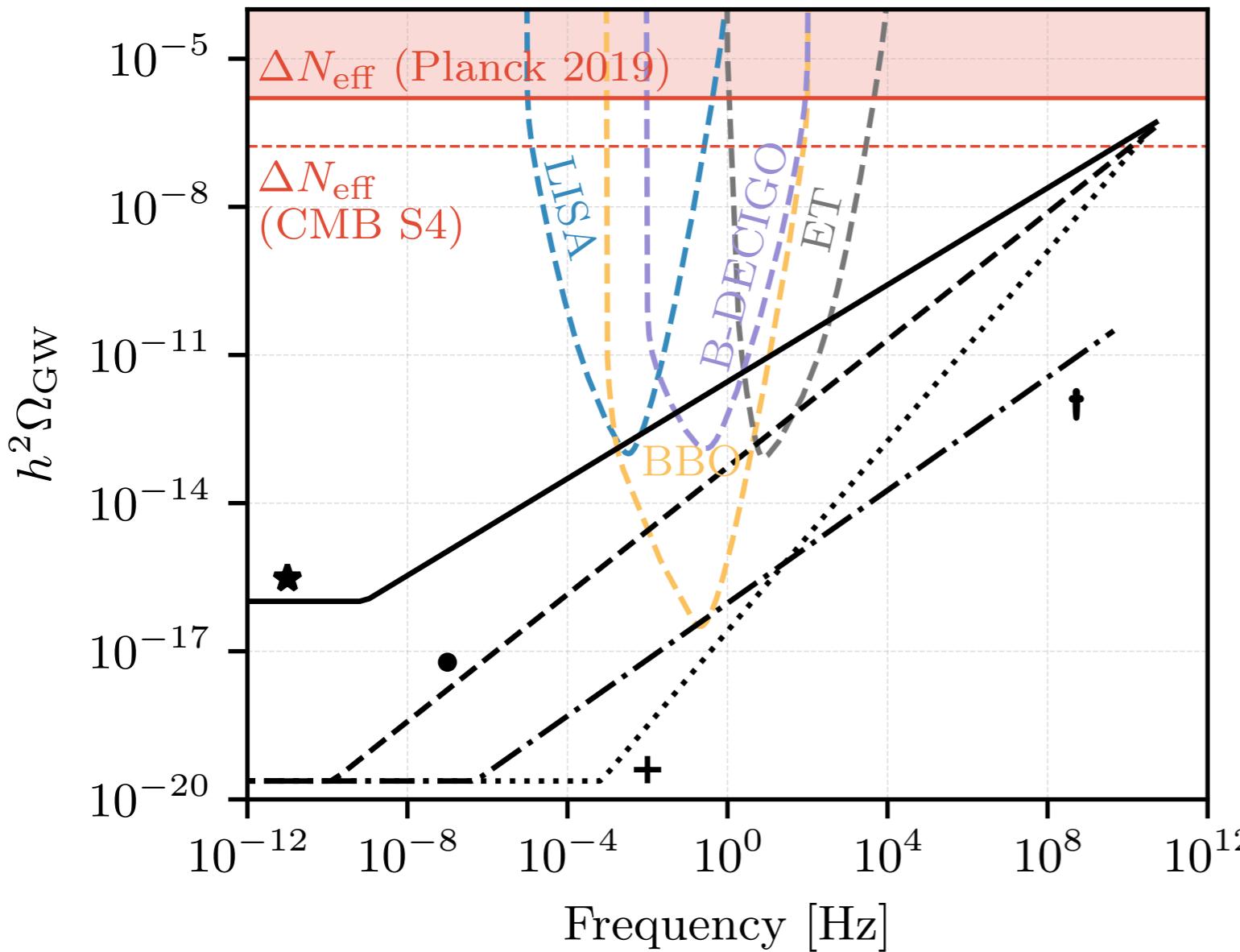
Reheaton Energy Density Evolution



Reheating Temperature



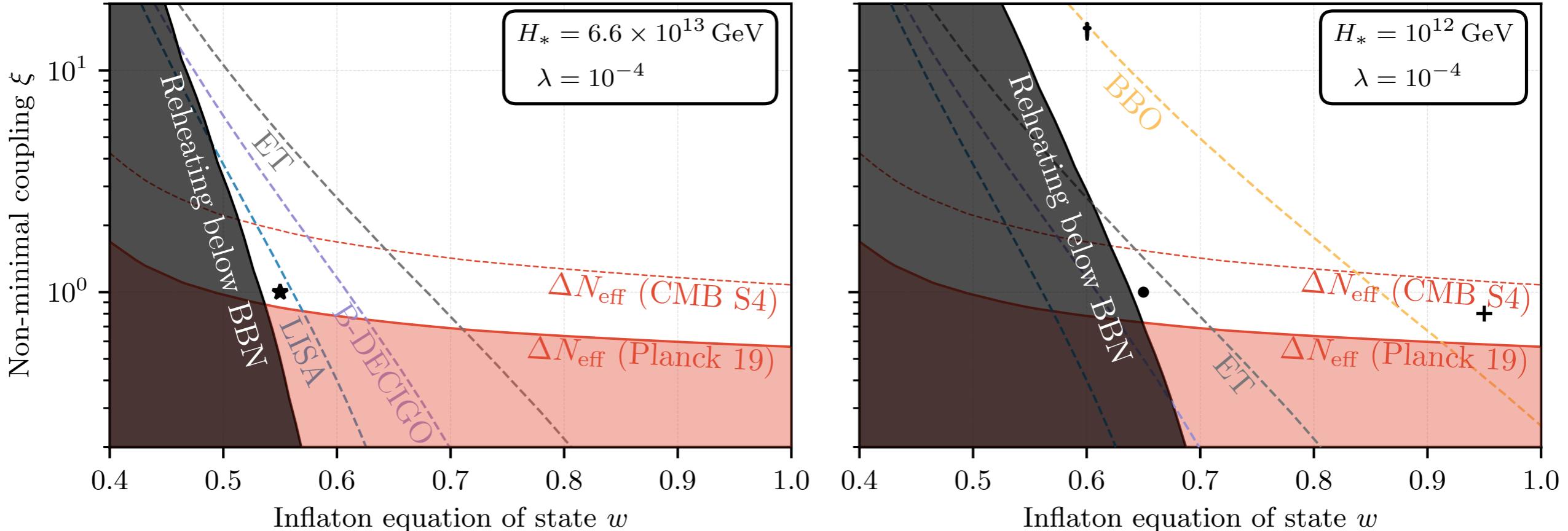
Blue-tilted primordial gravitational waves



Benchmark point	w	H_* [GeV]	ξ	λ
1. LISA ‘★’	0.55	6.6×10^{13}	1.0	10^{-4}
2. ET ‘●’	0.65	10^{12}	1.0	10^{-4}
3. CMB-S4 ‘+’	0.95	10^{12}	0.8	10^{-4}
4. Large ξ ‘†’	0.6	10^{12}	15.0	10^{-4}

$$\Omega_{\text{GW}}^0(k) = \Omega_{\text{GW}}^{0,\text{flat}} \begin{cases} 1, & k < k_{\text{ke}}^0 \\ \left(\frac{k}{k_{\text{ke}}^0}\right)^{\frac{2(3w-1)}{1+3w}}, & k_{\text{ke}}^0 \leq k \leq k_*^0 \\ 0, & k > k_*^0 \end{cases}$$

Gravitational Wave Detectability



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Higgs as the Reheaton

$$\mu^2 = \phi_{\min}^2 = \frac{3\xi(3w-1)}{\lambda(\mu)} H_{\min}^2(\lambda(\mu))$$

