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Current constraints on cosmological scenarios with very low reheating temperatures

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If reheating occurs at sufficiently low temperatures (below 20 MeV), neutrinosmdash;assuming they are populated only through weak interactionsmdash;do not have enough time to reach thermal equilibrium before decoupling. We present an updated analysis of cosmological models with very low reheating scenarios, including a more precise computation of neutrino distribution functions, leveraging the latest datasets from cosmological surveys. At the 95% confidence level, we establish a lower bound on the reheating temperature of $T_{\mathrm{RH}} > 5.96\,\mathrm{MeV}$, representing the most stringent constraint to date.

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