

New Hadronic Effects in BBN and Bounds on Heavy QCD Axions

Wednesday, 4 March 2026 11:35 (15 minutes)

Big Bang Nucleosynthesis (BBN) is a powerful and unique probe of new particles. In particular, if hadrons are injected by a new particle during BBN, the measurement of helium-4 can constrain the lifetime of that particle to be significantly shorter than the BBN time scale. In this talk, I will discuss new developments that include previously missing effects, such as scattering processes involving KL and secondary hadrons. I will then apply these results to the heavy QCD axion and obtain the first robust BBN bounds. This talk is based on arXiv:2510.23695.

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