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Cosmology meets functional QCD: First-order cosmic QCD transition induced by large lepton asymmetries

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The lepton flavour asymmetries of the Universe are observationally almost unconstrained before the onset of neutrino oscillations. We calculate the cosmic trajectory during the cosmic QCD epoch in the presence of large lepton flavour asymmetries. By including QCD thermodynamic quantities derived from functional QCD methods in our calculation our work reveals for the first time the possibility of a first-order cosmic QCD transition. We specify the required values of the lepton flavour asymmetries for which a rst-order transition occurs for a number of different benchmark scenarios.

Reference to paper (DOI or arXiv)

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Your gender (free text)

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