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Cosmological Stasis in a Thermal Environment

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Recently, it has been shown that there can exist a type of cosmological epoch in which the abundances of different energy components remain essentially fixed for an extended period. This phenomenon, which is known as cosmic stasis, has been shown to arise in a variety of BSM contexts. In all previous realizations of stasis, however, the sustained transfer of energy density between energy components which underpins stasis has always hinged on the presence of a tower of states. In this talk, by contrast, I shall present a realization of stasis in which this sustained transfer of energy density arises not from the presence of such a tower, but rather from thermal effects stemming from the annihilation of a single particle species. I then show that there exists a QFT Lagrangian in which this stasis can be realized and then show that a significant number of e-folds of stasis can be achieved with this model.

Mini Symposia (Invited Talks Only)

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