



High Energy Physics - Phenomenology

# Pion stability in a hot dense media

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Pions may remain stable under certain conditions in a dense media at zero temperature in the normal phase (non pion superfluid state). The stability condition is achieved when the in-media pion width vanishes. However, thermal fluctuations will change this stable regime. For low temperature pions will remain in a metastable state. Here we discuss the different possible scenarios for leptonic pion decays at finite temperature, taking into account all the different chemical potentials involved. The neutrino emission due to pions in a hot-dense media is calculated, as well as the coolig rate of a pion-lepton gas.

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