

Pions near condensation under compact star conditions

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The behavior of pions is studied in systems where their normal leptonic decay is forbidden. When thermal fluctuations are present, a low decay rate is generated, and as a consequence of lepton recombination, the amount of pions remains almost unaltered. Compact stars conditions are favorable for the formation of such intermediate state of charged pions: near condensation and almost stable, leading to a continuum source of anti-neutrinos. In particular, protoneutron stars could be an scenario where this state of matter is relevant.

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