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# Some Properties of π Meson in Nuclear Matter with Finite Density

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Abstract: In the GCM we study some properties of π meson as the Goldstone bosons in a nuclear matter with finite density. Using the effective action in a nuclear matter, we calculate the decay constant and π mass as functions of the chemical potential. The relation between the chemical potential and the density of a nuclear matter is firstly given here. We find that $f_\pi$ and $m_\pi$ monotonously decrease as nuclear matter density increases. The result is consistent with the usual assumption that the chiral symmetry is gradually restored as the density of a nuclear matter increases.

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Key words: π meson, effective action, chemical potential, nuclear matter density

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