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## In-medium neutral pion decay to two photons

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We study the in-medium corrections to the neutral pion decay into two photons. For the calculation we use in-medium chiral perturbation theory. We take into account both the wave function renormalization and the medium correction to the one-particle irreducible vertex. Since it was previously shown that there are no medium corrections to the vertex up to  $O(p^5)$ , that is, linear density in the density expansion, here we go up to next to linear order, or  $O(p^6)$ . We study the dependence of the corrections with the nuclear density and find that, at normal nuclear density, the corrections to the decay width are of the order of a few percent.

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