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Studying chiral imbalance using Chiral Perturbation Theory.

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We analize the most general low-energy effective lagrangian including local parity violating terms parametrized by an axial chemical potential μ_5. This result is obtained following the external source method, up to $\mathcal{O}(p^4)$ order in the chiral expansion for two light flavours. We show that the $\mathcal{O}(p^4)$ lagrangian includes new terms proportional to μ_5^2 and new low-energy constants. Finally, the μ_5 and temperature dependences of several observables related to the vacuum energy density are studied. The same procedure can be followed to incorporate isospin chemical potential.

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