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# Gravity induced CP violation in neutral mesons experiments

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The impact of earth's gravity on neutral mesons dynamics is analyzed. The main effect of a Newtonian potential is to couple the strangeness and bottomness flavor oscillations with the quarks zitterbewegung oscillations (arXiv:2503.09465). This coupling is responsible of the observed CP violations in the three types of experiments analyzed here: (i)indirect violation in the mixing, (ii) direct violation in the decay to one final state and (iii) violation in interference between decays with and without mixing. The three violation parameters associated with these experiments are predicted in agreement with the experimental data. The amplitude of the violation is linear with respect to the strength of gravity so that this new mechanism allows to consider matter dominated cosmological evolutions providing the observed baryon asymmetry of the universe.

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