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Baryogenesis via Mesino Oscillations

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We propose a model with a heavy $O(\text{TeV})$ coloured scalar which couples to the quarks via a singlet majorana fermion. After the chiral phase transition the heavy scalar binds with the SM quarks to form mesinos and anti mesinos. The mesino and antimmesino undergo oscillations mediated via the singlet and these oscillations are the source of CP violation. The colored scalar then decays in a baryon number violating fashion giving baryogenesis. We explore the parameter space of the model putting bounds on the mass of the colored scalar and the singlet by requiring that they give us the correct baryon to entropy ratio

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