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Resonant leptogenesis at TeV-scale and neutrinoless double beta decay

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We investigate a resonant leptogenesis scenario by quasi-degenerate right-handed neutrinos which have TeV-scale masses. Especially, we consider the case when two right-handed neutrinos are responsible to leptogenesis and the seesaw mechanism for active neutrino masses, and assume that the CP violation occurs only in the mixing matrix of active neutrinos. In this case the sign of the baryon asymmetry depends on the Dirac and Majorana CP phases as well as the mixing angle of the right-handed neutrinos. It is shown how the yield of the baryon asymmetry correlates with these parameters. In addition, we find that the effective neutrino mass in the neutrinoless double beta decay receives an additional constraint in order to account the observed baryon asymmetry depending on the masses and mixing angle of right-handed neutrinos.

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