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Leptogenesis in the PQ pole inflation

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We propose a leptogenesis scenario where baryon asymmetry is generated from the rotation of the QCD axion in the PQ pole inflation scenario. The rotation originating from PQ explicitly breaking terms corresponds to the asymmetry of the PQ charge and is converted into the baryon asymmetry by the inverse decay of a right-handed neutrino. We show the correlation between the reheating temperature, mass of the right-handed neutrino, initial velocity of the axion, and the axion decay constant, realizing the axion kinetic misalignment for the correct relic density.

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