

Screening Effects of Finite-Mass Fermions in Monopole Baryogenesis Scenario

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To investigate the finite mass effects in recently proposed monopole baryogenesis scenario, this study analyzes screening effect for the electric monopole charge, induced by CP-violating theta term, within a 't Hooft-Polyakov monopole background. Utilizing partial wave expansion and bosonized effective field theory for the massive charged fermions, we demonstrate that fermion finite masses lead to distinct screening behaviors compared to the original scenario, which provides crucial insights into baryogenesis mechanisms with realistic fermion dynamics.

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