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Charge asymmetry from CP-violating fermion scattering off bubble walls during the electroweak phase transition

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Content

We compute the net electric current generated during a first order electroweak phase transition when fermions transit from the false to the true vacuum. This current is generated by the CP-violating fermion interaction with the Higgs during the phase transition and is quantified in terms of a CP-violating phase in the bubble wall separating the symmetric from the symmetry-broken phases. We comment on the seed magnetic field that this current is able to generate and it is possible implications for magnetogenesis in the early universe during the electroweak phase transition.

Session

Poster sessions

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