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Axial charge segregation during a first order phase transition in the presence of hypermagnetic fields

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We study the scattering of fermions off a finite width bubble wall during the electroweak phase transition in the presence of a background hypermagnetic field.

We show that the chiral nature of the fermion coupling with the background field in the symmetric phase generates an axial asymmetry in the scattering processes. We discuss possible implications of such axial charge segregation for baryon number generation.

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