

On the magnetogenesis and baryogenesis at the electroweak cross over

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It has been found that baryon asymmetry of the Universe (BAU) can be generated without introducing any new physical ingredients beyond the Standard Model (SM) from the chiral asymmetry of the SM, if there exist helical hypermagnetic fields before the electroweak symmetry breaking. Then in order to explain the BAU, we need the physics beyond the SM to generate large-scale hypermagnetic fields. In this talk I will discuss the ways to generate such hypermagnetic fields suitable for baryogenesis.

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