

How's Schwinger effect affect primordial Magnetogenesis?

Friday 3 May 2024 14:00 (1 hour)

The Schwinger effect is a non-perturbative phenomenon in QED in which an electric field stronger than a certain strength decays into charged particle pairs. In primordial magnetogenesis, especially in inflationary magnetogenesis, the Schwinger effect can drastically change the dynamics of the electromagnetic fields and significantly alter theoretical predictions. However, until recently this effect has been often neglected. Even now that its importance has been recognized, reliable computational methods for it is yet to be established. In this talk, I will introduce several prescriptions proposed so far, including my own work, and discuss what we can do to elucidate a realistic mechanism of magnetogenesis that incorporates the Schwinger effect.

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