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Gauge/Fermion Production in Axion Inflation

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A Chern-Simons coupling with a gauge field is common in axion inflation. It is well known that this coupling leads to interesting phenomenology via the resonant production of helical gauge fields; e.g., gravitational wave, magnetogenesis, leptogenesis, etc. In this talk, we extend the previous analysis to the case where chiral fermions are charged under this gauge field which couples with the inflaton via the Chern-Simons coupling. This is the case for instance with the SM gauge group. We discuss how this coupling modifies the phenomenology by the associated production of these chiral fermions.

Parallel Session

Cosmology and Gravitational Waves

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