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## Axion Inflation in the Strong-Backreaction Regime: Decay of the Anber–Sorbo Solution

*Monday 5 February 2024 10:55 (45 minutes)*

Axion inflation coupled to Abelian gauge fields via a Chern-Simons-like term presents an attractive inflationary model with rich phenomenology, including the production of magnetic fields, black holes, gravitational waves, and possible links to the matter-antimatter asymmetry. In my talk, I will discuss a particular regime of axion inflation, the so-called Anber-Sorbo solution. In this scenario, the gauge-field production provides the dominant source of friction for the motion of the inflaton. I will present the most recent results of me and my collaborators, where we demonstrate that the Anber-Sorbo Solution is unstable. To this end, I will first discuss the “gradient expansion formalism”(GEF), a technique to solve the classical equations of motion for axion inflation in real space. I will then demonstrate how one can use the GEF to study the instability of the Anber-Sorbo solution.

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