

Magnetogenesis from axion-SU(2) inflation

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The origin and maintenance of magnetic fields is an outstanding question of modern cosmology and astrophysics. Dynamo and compression mechanisms during gravitational collapse accompanying the structure formation can only amplify existing magnetic fields, but cannot explain their genesis. The need for a “seed” field motivates the investigation of primordial origin of magnetic fields. The search for primordial magnetic fields is further inspired by recent γ -ray observations of distant blazars, which set lower limits on the magnetic field strength and suggest the existence of magnetic fields in intergalactic voids. In this talk I will discuss the magnetogenesis scenario during the axion-SU(2) inflation –inflation with the axion field coupled to the weak sector of the Standard Model. I will investigate the viability of such a scenario together with its observational predictions.

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