

# Is Cosmic Birefringence model-dependent?

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Exciting clues to isotropic cosmic birefringence have recently been detected in the  $EB$  cross-power spectra of the polarization data of the cosmic microwave background (CMB). Early Dark Energy (EDE) models with a pseudoscalar field coupled to photons via a Chern-Simons term can be used to explain this phenomenon, and can also potentially be used to simultaneously resolve the  $H_0$  tension. In this work we incorporate an early dark energy scalar field, including a Chern-Simons coupling, into an existing Boltzmann solver and numerically recover the  $EB$  cross-power spectrum for two models in the literature; the  $\alpha$ -attractor, and the Rock 'n' Roll field. We find that both the models fit the  $EB$  spectra, and the  $EB$  spectra alone do not possess sufficient constraining power to distinguish the two models based on current data.

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