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Title:	Inflationary magnetogenesis: Solving the strong coupling and its non-gaussian signatures.
Authors:	Nandi, Debottam (/jspui/browse?type=author&value=Nandi%2C+Debottam)
Keywords:	Inflationary magnetogenesis
Issue Date:	2021
Publisher:	ACS Publications
Citation:	Journal of Cosmology and Astroparticle Physics, 2021(8).
Abstract:	The simplest model of primordial magnetogenesis can provide scale-invariant magnetic fields that can explain the present abundances of it in the cosmic scales. Two kinds of solutions of the coupling function can lead to such phenomena and both of them suffer from the problems of either strong-coupling or large backreaction. In this work, we consider the coupling function as a linear combination of both kinds with a model parameter. We find that the parameter needs to be as small as ~ 10-20 in order to evade the backreaction problem. On the other hand, requiring that the modes above Mpc scales do not suffer strong coupling, we also obtain a weak constraint of the model parameter to be greater than 10-60. For the allowed range of the model parameter, we, then, analytically evaluate the cross-correlation functions between the magnetic fields and the curvature perturbation. We find that such a combination preserves the consistency relation. Also, the result leads to enhanced non-Gaussianity in equilateral as well as flattened limits with unique signatures that characterize the novelty of this model.
Description:	Only IISER Mohali authors are available in the record
URI:	https://doi.org/10.1088/1475-7516/2021/08/039 (https://doi.org/10.1088/1475-7516/2021/08/039) http://hdl.handle.net/123456789/4547 (http://hdl.handle.net/123456789/4547)
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