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# Correlation functions of sourced gravitational waves in inflationary scalar vector models. A symmetry based approach

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In this work we use the correspondence between a field theory in de Sitter space in 4-dimensions and the dual conformal field theory in an euclidean space in 3-dimensions, to compute the form of two and three point correlation functions of scalar-tensor perturbations. To this end, we use an inflationary model, in which the inflaton field is interacting with a vector field trough the term $f(\phi)\left(F_{\mu\nu}F^{\mu\nu}+\kappa\tilde{F}_{\mu\nu}F^{\mu\nu}\right)$.
The first step of this method consist in to solve the equations of motion for the fields in the de Sitter 4D space-time, then evaluate this solutions in super-Hubble scales and compute the conformal weight of the projection of this fields in the 3D space. In a second stage, we propose a general form for the correlators, which involve scalar, vector and tensor perturbations and, using the first step result, find its momentum dependence by imposing that those are invariant under dilatations and special conformal transformation (SCT). As a result, we find the form for the different Spectrums of the tensor perturbations and for the a mixed Bispectrum coming from the vacuum and for the vector perturbations. They show to be in agreement with the results in the literature.

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