**Non-Gaussian and loop effects of inflationary correlation functions in BRST formalism**

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We investigate inflationary correlation functions in single-field inflation models. We adopt a BRST formalism where locality and covariance at the sub-horizon scale are manifest. The scalar and tensor perturbations are identified with those in the comoving gauge which become constant outside the cosmological horizon. Our construction reproduces the identical non-Gaussianity with the standard comoving gauge. The accumulation of almost scale-invariant fluctuations could give rise to IR logarithmic corrections at the loop level. We investigate the influence of this effect on the sub-horizon dynamics. Since such an effect must respect covariance, our BRST gauge has an advantage over the standard comoving gauge. We estimate IR logarithmic effects to the slow-roll parameters at the one-loop level. We show that ϵ receives IR logarithmic corrections, while this is not the case for η. We point out that IR logarithmic effects provide the shift-symmetry-breaking mechanism. This scenario may lead to an inflation model with a linear potential.