Contribution ID: **24** Type: **not specified**

Gravitational waves from Gauss-Bonnet-corrected single-field inflation

Monday, 6 November 2023 15:10 (20 minutes)

I shall discuss gravitational wave signatures coming from a single-field inflation model in which the inflaton couples to the Gauss-Bonnet term. When the scalar potential term and the Gauss-Bonnet coupling term have different signs, a nontrivial fixed point arises, effectively inducing ultra slow-roll inflation. In this case, primordial black holes can form, together with enhanced scalar-induced gravitational waves. When the scalar potential term and the Gauss-Bonnet coupling term have same signs, on the other hand, there may exist a region where the Gauss-Bonnet term briefly dominates. In this case, the primordial inflationary gravitational waves can be enhanced. The detectability of the gravitational wave signals shall be discussed as well.

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Session Classification: Inflation