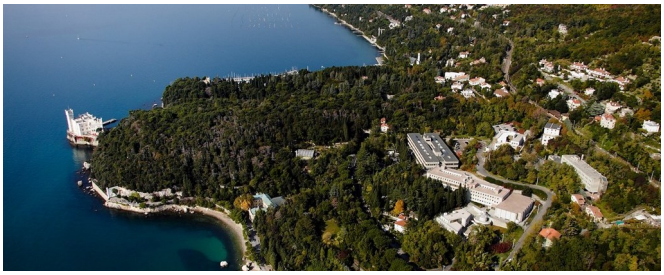

Contribution ID: **129** Type: **not specified**

Dissipative Inflation via Scalar Production

Thursday 31 August 2023 18:15 (25 minutes)

We describe a new mechanism that gives rise to dissipation during cosmic inflation. In the simplest implementation, the mechanism requires the presence of a massive scalar field with a softly-broken global U(1) symmetry, along with the inflaton field. Particle production in this scenario takes place on parametrically sub-horizon scales. Consequently, the backreaction of the produced particles on the inflationary dynamics can be treated in a \textit{local} manner, allowing us to compute their effects analytically. We determine the parametric dependence of the power spectrum which deviates from the usual slow-roll expression. Non-Gaussianities are always sizeable whenever perturbations are generated by the noise induced by dissipation.

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Session Classification: Parallel