

**SUSY 2024**

**Theory meets Experiment**

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## **Borel resummation of secular divergences in stochastic inflation**

*Thursday 13 June 2024 18:30 (20 minutes)*

We make use of Borel resummation to extract the exact time dependence from the divergent series found in the context of stochastic inflation. Correlation functions of self-interacting scalar fields in de Sitter spacetime are known to develop secular IR divergences via loops, and the first terms of the divergent series have been consistently computed both with standard techniques for curved spacetime quantum field theory and within the framework of stochastic inflation. We show that Borel resummation can be used to interpret the divergent series and to correctly infer the time evolution of the correlation functions. In practice, we adopt a method called Borel-Padé resummation where we approximate the Borel transformation by a Padé approximant. We also discuss the singularity structures of Borel transformations and mention possible applications to cosmology.

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