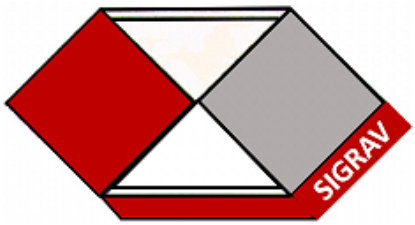

Contribution ID: **64** Type: **not specified**

Massive scalar field in de Sitter space:a two-loop calculation and a comparison with the stochastic approach

Tuesday, September 7, 2021 11:30 AM (30 minutes)

We examine the long-wavelength correlation functions of massive scalar fields in de Sitter space. For the theory with a quartic self-interaction, the two-point function is calculated up to two loops. Comparing our results with the Hartree-Fock approximation and with the stochastic approach shows that the former resums only the cactus type diagrams, whereas the latter contains the sunset diagram as well. We also demonstrate that the long-wavelength expectation value of the commutator of two fields is equal to zero both for spacelike and timelike separated points.

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Session Classification: Gravity Theory

Track Classification: Gravity theory