Contribution ID: **25**   Type: **not specified**

Mapping inflationary loop corrections to boundary terms

Both single- and multi-field models of inflation might lead to enhanced scalar fluctuations on scales much smaller than those seeding the large-scale structure formation. In these scenarios, it is possible that the spike of power at high wavenumber might induce large corrections to the scalar power spectrum, e.g. in the form of loop corrections, potentially endangering the perturbativity of the underlying models. In this talk we discuss recent developments in the calculation of the 1-loop correction to a large-scale adiabatic mode. We demonstrate that non-volume-suppressed corrections only contribute at the boundaries of the momentum integral. To achieve this we employ expansion methods, such as the δN formalism, as well as more general expansions that do not rely on assumption of validity of the separate universe picture.

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