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Type: **Invited talk in a parallel session**

Conformal Backreaction, Chiral and Conformal Anomalies in The Early Universe

Monday, 8 July 2024 17:00 (40 minutes)

Conformal Field Theory in momentum space allows to investigate effective actions related to the Trace Anomaly of the Stress energy Tensor in great detail. The resulting action is nonlocal and can be investigated in general metric backgrounds. The method of reconstruction of the action is worked out, in our analysis, both around flat spacetime and for general backgrounds, by comparing the conformal constraints of flat space with the variational solution of the trace anomaly functional. We present explicit examples of this comparison for the conformal case. We extend the method to the analysis of the effective action for the chiral gravitational anomalies, as well as for parity odd trace anomalies. We discuss the physical implications of these results in early universe cosmology and the evolution of chiral asymmetries in chiral plasmas

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Session Classification: Quantum field theory in curved spacetimes and perturbative quantum gravity

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