

Momentum-space entanglement in scalar field theory on the fuzzy sphere

Wednesday, December 16, 2020 2:20 PM (20 minutes)

In this talk, I will study the quantum entanglement in the momentum space for scalar field theory on a fuzzy sphere. In an interacting quantum field theory, the degrees of freedom in momentum space show entanglement; it quantifies the correlation between the high/low momentum modes. On a fuzzy sphere, an example of noncommutative space, it is known that the UV and IR degrees of freedom show a characteristic correlation known as UV/IR mixing. I thus study the entanglement entropy in the momentum space for quantum field theory defined on the fuzzy sphere and examine the difference from the theory on the ordinary sphere.

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Session Classification: Short talks