

# Momentum-space entanglement in scalar field theory on noncommutative spaces

*Wednesday, 8 December 2021 14:20 (20 minutes)*

In this talk, I consider the quantum entanglement in the momentum space for scalar field theory on noncommutative spaces. 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. In noncommutative spaces, 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 noncommutative spaces, in particular on the fuzzy sphere, and examine the difference from the theory on the commutative counterpart.

**Presenter:** Dr KAWAMOTO, Shoichi (National Tsing Hua University)

**Session Classification:** Short talk