

Talk Xiangyu Cao: Objectivity and encoding in inflationary quantum dynamics

Thursday 3 October 2024 10:00 (1 hour)

Objectivity and encoding in inflationary quantum dynamics

Quantum chaotic dynamics is known to encode information, making them practically inaccessible. Meanwhile, macroscopic environments and measurement devices are able to broadcast information about quantum degrees of freedom, leading to the emergence of classical objectivity [1]. Such “classicalization” is also believed to happen during cosmological inflation [2]. I will report recent [3] and ongoing works about sharp dynamical transitions between encoding and objectivity in inflationary quantum dynamical systems.

[1] Zurek, W., Nature Phys 5, 181–188 (2009).

[2] Martin, J., Vennin V., Phys. Rev. D 93, 023505 (2016).

[3] Ferte, B, XC, Phys. Rev. Lett. 132, 110201 (2024),
Phys. Rev. A 109, 032226 (2024).