

Simulating non-commutative geometries - A focused talk on fuzzy geometries

Non-commutative geometry describes geometry through an algebra and a Dirac operator acting on a Hilbert space. When describing ordinary geometry this algebra is infinite dimensional and commutative. The concepts can however be easily generalized to non-commutative algebras, which leads to a new concept of geometry. Further generalizing to finite algebras leads to a discretisation of space, often referred to as fuzzy spaces. These have been explored as possible quantisations of geometry for a long time, and in this talk I will present some recent results using Monte Carlo simulations to explore the path integral over non-commutative geometries.