

Simplicial Lattice Field Theory on de Sitter and anti de Sitter Manifolds

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The generalization of Lattice Field Theory targeting in curved Riemann manifolds referred to as Quantum Finite Elements (QFE) requires geometrical tools. A brief outline for the construction of a Simplicial Complex and its Delaunay dual, the construction Finite Element of lattice action based on the elegant Discrete Exterior Calculus (DEC) is given. The focus in on spheres and hyperbolic manifolds suited to radial quantization of conformal field theory and the AdS/CFT correspondence respectively. The formalism aims to construct simplicial actions for scalar, Dirac and non-Abelian fields.

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