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A Riemann sum approach to quantum field theory

Abstract

There are many approaches to mathematical quantum field theory. If the path integral of a quantum field theory is regarded as a generalization of the ordinary definite integral, then a lattice model of a quantum field theory could be regarded as an analogue of a Riemann sum. Lattice models of topological quantum field theories are relatively well-understood. In this talk, I will focus on lattice models of conformal field theories from anyonic chains. Moreover, lattice models in fracton physics raise an interesting question: what kinds of quantum field theories are they approximating if their continuous limits exist?