

A practical construction of U(1) chiral lattice gauge theories

Presenter: Daisuke Kadoh

Daisuke Kadoh, Yoshio Kikukawa

Abstract: We propose a formulation of U(1) chiral lattice gauge theory which is usable for numerical studies. In our approach, the local cohomology problem is solved within a finite volume lattice by reformulating the Poincaré lemma so that it holds true on the finite lattice up to exponentially small corrections. Using this solution, a simple and explicit formula of the Weyl fermion measure can be obtained. We also propose a different method by which some of the parameter integrals necessary to construct the measure can be omitted.