

Title: Higher Berry curvature on a lattice

Abstract:

The well-known Berry curvature is a geometric quantity that characterizes a parameter-dependent quantum mechanical system. Recently, the concept of higher Berry curvature, which is a higher dimensional generalization of the Berry curvature, has been proposed in quantum many-body systems on a lattice. In this talk, I will introduce some recent progresses along this direction, including the exactly solvable model, the topological structure, as well as the wavefunction construction of this quantity.