

Closing event - Summer Training Program: Quantum Matter - Materials & Concepts

Contribution ID: 5

Type: **not specified**

U(1) Lattice Gauge Theory

Thursday, October 29, 2020 10:10 AM (20 minutes)

We explore the phases of the compact U(1) gauge theory for different values of the gauge coupling and different numbers of points in the direction of the compactified Euclidean time dimension, N_t . We find that the theory has two phases: a confined phase at strong coupling and a deconfined one at weak coupling. We further calculate the average plaquette, the average Polyakov loop, and respective susceptibilities, thus determining the value of the critical gauge coupling at which the phase transition occurs for each value of N_t .

Presenter: CARREIRA, Rafael