

Michele Burrello: "Topological Semimetals in Artificial Gauge Potentials"

Friday 22 June 2018 11:45 (30 minutes)

In the last years, several research groups worldwide managed to reproduce the physics of Weyl fermions and to obtain the exotic features of topological semimetals in different condensed matter setups, including not only solid state compounds, but also photonic crystals. In this talk I will introduce the main features of these gapless 3D topological states of matter and I will focus on alternative realizations of Weyl semimetals based on a model for ultracold atoms in the presence of artificial magnetic fluxes in a cubic lattice. In these condensed matter systems, the emergent Lorentz invariance can be violated, and I will discuss some of the main examples of topological semimetals going beyond the standard Weyl case.

Session Classification: Morning session