



Contribution ID: 212

Type: **Talk**

Electroweak transitions due to magnetic field: first-principle lattice results

Tuesday 31 August 2021 12:30 (30 minutes)

Using numerical first-principle lattice simulations, we show that the vacuum of the electroweak sector of the Standard Model experiences two consecutive (phase) transitions in the background magnetic field at zero temperature. The first transition is associated with the dynamics of both Higgs and vector bosons, while the second transition marks the electroweak symmetry restoration. Our simulations indicate that the new intermediate phase is a liquid of quasiclassical vortices which carry condensates of the charged W bosons in their cores and therefore possess superconducting properties. The transitions appear at the field strengths of the order of 10^{20} Tesla.

Is this abstract from experiment?

No

Name of experiment and experimental site

N/A

Is the speaker for that presentation defined?

Yes

Details

N/A

Internet talk

Yes

Primary author: CHERNODUB, Maxim (University of Tours, CNRS)

Presenter: CHERNODUB, Maxim (University of Tours, CNRS)

Session Classification: Workshop on Lattice and Condensed Matter Physics