

Evolution of chirality in the electron-positron pair production driven by photons

Topic: Laser-induced Schwinger effect (non-perturbative electron-positron pair production in vacuum).

Goal: Study the evolution of chiral charge at the finite-mass situation.

Tool: Dirac-Wigner-Heisenberg formalism based on gauge-invariant Wigner function.

Discovery:

- 1 The mass does not only suppress the chiral charge, it also leads to the **oscillation** of it.
- 2 The consequence of the oscillation is a peak on the chiral charge spectrum. The location of it only depends on the mass.