



Contribution ID: 273

Type: **not specified**

Millicharged particles at electron colliders

Thursday 26 August 2021 10:35 (25 minutes)

We propose to search for millicharged particles in electron colliders operated with the center-of-mass energies at $\mathcal{O}(1-10)$ GeV, which include Belle II, BESIII, BaBar, and also the proposed experiment STCF. We use the monophoton final state to probe the parameter space of millicharged particles at electron colliders. We find that electron colliders have sensitivity to the previously unexplored parameter space for millicharged particles with MeV-GeV mass: $\epsilon < \mathcal{O}(10^{-1})$ for $0.5 \text{ GeV} < m < 3.5 \text{ GeV}$ in BaBar, $\epsilon < \mathcal{O}(10^{-3})$ for $0.1 \text{ GeV} < m < 1.5 \text{ GeV}$ in BESIII, $\epsilon < 10^{-3} - 10^{-2}$ for $0.1 \text{ GeV} < m < 4 \text{ GeV}$ in Belle II, and $\epsilon < \mathcal{O}(10^{-4})$ for $1 \text{ MeV} < m < 1 \text{ GeV}$ in STCF.

Authors: LIANG, Jinhan (Nanjing University); LIU, Zuowei (Nanjing University); MA, Yue; Mr ZHANG, Yu (Anhui University)

Presenter: LIANG, Jinhan (Nanjing University)

Session Classification: Lepton Colliders

Track Classification: Lepton Colliders