



Contribution ID: 93

Type: Oral presentation using Zoom

Search for new light particles using MeV photon beam at the ILC

Thursday, 28 October 2021 16:30 (30 minutes)

As a positron source at the ILC, it is discussed to use pair creation processes by a $\mathcal{O}(\text{MeV})$ photon beam, which is generated from the high-energy electron beam. The current design expects that the photon flux would be as intense as 10^{17} photons / s, being the strongest MeV photon source available on the ground.

We propose to use this photon beam for the search for new light particles. As a benchmark model, we discuss the dark photon and the QCD axion. The use of the energetic photon beam opens a new window for relatively heavy mass regions, i.e. $\leq \mathcal{O}(100)$ eV. We have found that our proposal can constrain not only new parameter regions as a ground experiment but also some physical parameter region of the QCD axion.

1st preferred time slot for your oral presentation

10:00-12:00 JST (3:00-5:00 CEST, 21:00-23:00 EDT, 18:00-20:00 PDT)

2nd preferred time slot for your oral presentation

13:00-15:00 JST (6:00-8:00 CEST, 0:00-2:00 EDT, 21:00-23:00 PDT)

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Presenter: FUKUDA, Hajime

Session Classification: H&O: BSM particle production & Fixed target / Dark sectors / Applications outside particle physics

Track Classification: Parallel sessions: Transversal Task Forces: Session O: Fixed target / Dark sectors / Applications outside particle physics