



Contribution ID: 76

Type: Oral presentation using Zoom

Studying exotic gauge bosons using ILC beam-dump

Thursday, 28 October 2021 11:12 (24 minutes)

We discuss the prospect of detecting new gauge bosons (like the dark photon and leptophilic gauge bosons) using the ILC beam dump, assuming that muon shield, veto counter, and particle detector are installed behind the beam dump. Because the e^\pm beams are dumped after each collision at the ILC, a large number of electrons and positrons are available for the beam dump experiment. If a new gauge boson exists, it can be produced in the beam dump, go through the shield, and decay inside the decay volume to be detected by the particle detector. We show that, with the design luminosity, parameter regions that have not been excluded by other experiments so far can be accessed by the ILC beam dump experiment. We also discuss the possibility to distinguish different models of new gauge bosons by identifying the decay products of the new gauge boson.

1st 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)

2nd preferred time slot for your oral presentation

15:30-17:30 JST (8:30-10:30 CEST, 2:30-4:30 EDT, 23:30-1:30 PDT)

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Session Classification: O-2: 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