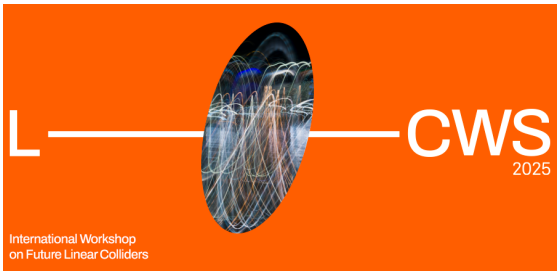

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Searching for long-lived particles with the ILD experiment

Tuesday 21 October 2025 12:30 (20 minutes)

Future e^+e^- colliders provide a unique opportunity for long-lived particle (LLP) searches. We present a full simulation study of LLP searches using the International Large Detector (ILD), where a gaseous time projection chamber as the main tracking device provides excellent prospects for LLP searches. Signatures of displaced vertices and kinked tracks are explored. We study challenging final states involving both very soft displaced tracks and boosted, nearly collinear tracks. Backgrounds from beam-induced interactions and other Standard Model processes are considered. We present expected exclusion limits for a model-independent analyses, as well as for Higgs boson decays to LLPs, for a range of LLP lifetimes.

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