

Sustainability Strategy for the Cool Copper Collider

Friday 19 July 2024 15:30 (15 minutes)

In this talk, we will discuss the studies presented in PRX ENERGY 2, 047001, where the carbon impact of the Cool Copper Collider (C³), a proposed e^+e^- linear collider operated at 250 and 550 GeV center-of-mass energy, is evaluated. We introduce several strategies to reduce the power needs for C³ without modifications in the ultimate physics reach. We also propose a metric to compare the carbon costs of Higgs factories, balancing physics reach, energy needs, and carbon footprint for both construction and operation, and compare C³ with other Higgs factory proposals –ILC, CLIC, FCC-ee and CEPC –within this framework. We conclude that the compact 8 km footprint and the possibility for cut-and-cover construction make C³ a compelling option for a sustainable Higgs factory. More broadly, the developed methodology serves as a starting point for evaluating and minimizing the environmental impact of future colliders without compromising their physics potential.

Alternate track

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