Contribution ID: **237** Type: **Invited Oral Presentation**

Design Initiatives for a 10 TeV pCM Wakefield Collider

Tuesday 3 June 2025 11:00 (30 minutes)

The recent P5 Report calls for a 10 TeV parton center-of-mass (pCM) collider, for which advanced wakefield accelerators are a candidate technology. Design studies are being developed including particle sources, damping rings, and linacs based on plasma and structure-based wakefield accelerators. Compact Beam Delivery Systems may be possible using plasma lenses, requiring understanding of their impact on the design of the Machine-Detector Interface, and optimization of detectors for 10 TeV e+e- and γγ collisions. The results of the design study will define the necessary technology demonstrations to be performed. There are synergies between the design of a 10 TeV linear collider and Higgs Factory linear colliders. This study is hence developing tools and innovations that can be broadly useful to the collider community, and interaction among efforts is important.

Footnotes

Funding Agency

Primary author: GESSNER, Spencer (SLAC National Accelerator Laboratory)

Presenter: GESSNER, Spencer (SLAC National Accelerator Laboratory)

Session Classification: TUYN:Colliders and Related Accelerators (Invited)

Track Classification: MC1 :Colliders and Related Accelerators: MC1.A01 Hadron Colliders