



Contribution ID: 1536 Contribution code: MOPL098

Type: **Poster Presentation**

Helen: Traveling wave SRF Linear Collider Higgs factory

Monday, 8 May 2023 16:30 (2 hours)

Travelling wave (TW) SRF accelerating structures offer several advantages over the traditional standing wave structures: substantially lower H_{pk}/E_{acc} and lower E_{pk}/E_{acc} , ratios of peak magnetic field and peak electric field to the accelerating gradient, respectively, together with substantially higher R/Q . In this paper we discuss how a linear collider Higgs factory HELEN can be built using TW-based SRF linacs. We cover a plan to address technological challenges and describe potential ways to upgrade the collider luminosity and energy.

Funding Agency

Work supported by the Fermi National Accelerator Laboratory, managed and operated by Fermi Research Alliance, LLC under Contract No. DE-AC02-07CH11359 with the U.S. Department of Energy.

Footnotes

I have read and accept the Privacy Policy Statement

Yes

Primary author: BELOMESTNYKH, Sergey (Fermi National Accelerator Laboratory)

Co-authors: BHAT, Pushpalatha (Fermi National Accelerator Laboratory); GRASSELLINO, Anna (Fermi National Accelerator Laboratory); NAGAITSEV, Sergei (Fermi National Accelerator Laboratory); PADAMSEE, Hasan (Cornell University); POSEN, Sam (Fermi National Accelerator Laboratory); ROMANENKO, Alexander (Fermi National Accelerator Laboratory); VALISHEV, Alexander (Fermilab); SHILTSEV, Vladimir (Fermi National Accelerator Laboratory); YAKOVLEV, Vyacheslav (Fermi National Accelerator Laboratory)

Presenter: BELOMESTNYKH, Sergey (Fermi National Accelerator Laboratory)

Session Classification: Monday Poster Session

Track Classification: MC1: Colliders and other Particle Physics Accelerators: MC1.A03: Linear Lepton Colliders