



Contribution ID: 167

Type: not specified

Two-Beam-Acceleration Experiments at the Argonne Wakefield Accelerator Facility (AWA)

Friday, August 7, 2015 5:42 PM (18 minutes)

The Argonne Wakefield Accelerator Facility develops technology for future HEP accelerators. Its main focus is on the use of electron beam driven wakefield acceleration using RF structures. A high intensity electron linac is used to drive wakefields, and a second electron linac provides electron bunches to be accelerated by these wakefields. Recent two-beam-acceleration (TBA) experiments have demonstrated accelerating gradients higher than 50 MV/m, while preserving the beam quality of the accelerated bunches. Further experiments aim at surpassing 100 MV/m gradients and achieving net energy gains of more than 100 MeV. Demonstration of successive acceleration using two TBA stages will follow shortly.

Oral or Poster Presentation

Oral

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Session Classification: Accelerators, Detectors, Computing

Track Classification: Accelerators