



Contribution ID: 1999 Contribution code: MOPC69

Type: **Poster Presentation**

Permanent magnet electron energy synchrotron 2–18 GeV with fixed betatron tunes

Monday, 20 May 2024 16:00 (2 hours)

We are presenting a design of a 2-18 GeV electron synchrotron accelerator made of permanent non-linear combined function magnets with fixed betatron tunes. It is based on the successfully commissioned CBETA Energy Recovery Linac where we used a single return beam line based on Fixed Field Alternating gradient (FFA) principle. The 2 GeV injection energy electrons come from the Recirculating Linear Accelerator (RLA) with 500 MeV linac and a single FFA linear combined function magnet beam line to return electrons to the linac. The electron collision energy uses the same single beam line avoiding the RF accelerating cavities during selected number of turns.

Footnotes

Funding Agency

This manuscript has been authored by employees of Brookhaven Science Associates, LLC under Contract No. DE-SC0012704 with the U.S. Department of Energy

Paper preparation format

Region represented

North America

Primary author: TRBOJEVIC, Dejan (Brookhaven National Laboratory)

Co-authors: BOGACZ, Alex (Thomas Jefferson National Accelerator Facility); HOFFSTAETTER, Georg (Cornell University (CLASSE)); BERG, J. (Brookhaven National Laboratory); BROOKS, Stephen (Brookhaven National Laboratory)

Presenter: TRBOJEVIC, Dejan (Brookhaven National Laboratory)

Session Classification: Monday Poster Session

Track Classification: MC1: Colliders and other Particle and Nuclear and Physics Accelerators: MC1.A19 Electron-Hadron Colliders