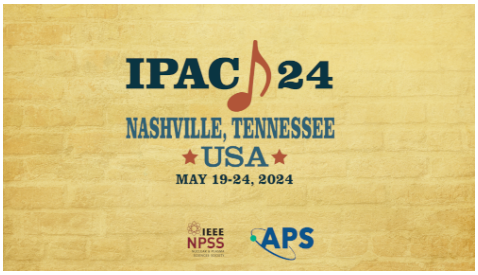

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Fixed tunes fast cycling permanent magnet proton FFA synchrotron

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

We present a novel concept of the Fixed-Field-Alternating (FFA) permanent magnet small racetrack proton accelerator with kinetic energy range between 10-250 MeV. The horizontal and vertical tunes are fixed within the energy range providing very fast cycling with a frequency of 400 Hz to 1.3 KHz. The injector is commercially available cyclotron with RF frequency of 65 MHz. The permanent magnet synchrotron has a shape of a racetrack where the two arcs are made of combined function permanent non-linear fields magnets to provide fixed betatron tunes for the extraordinary kinetic energy range between 10 and 250 MeV.

Footnotes

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