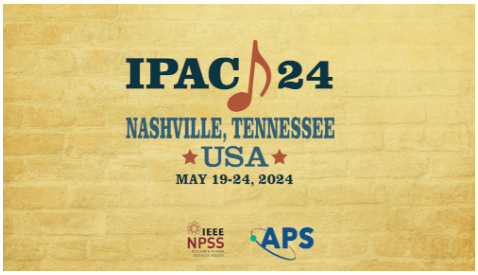

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Generation of bunched beam for SRF industrial cryomodules

Thursday, 23 May 2024 16:00 (2 hours)

Compact SRF industrial linacs can provide unique parameters of the beam (>1 MW and >1-10 MeV) hardly achievable by normal conducting linacs within limited space. SRF technology was prohibitively expensive until the development of conduction cooling which opened the way for compact stand alone SRF systems suitable for industrial and research applications. Limited cooling capacity puts strict requirements on the beam parameters with zero losses of the beam on the SRF cavity walls. This implies strict requirements on the beam energy to be accepted by the cryomodule and most importantly the beam bunching with zero particles in between. We present one possible solution for this problem based on velocity bunching and tails annihilation by a dipole. A group of bunchers provide beam bunching and energy boost from 20 keV up to 300 keV to be acceptable by the cryomodule.

Footnotes

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Primary author: KOSTIN, Roman (Fermi National Accelerator Laboratory)

Co-author: JING, Chunguang (Euclid Beamlabs LLC)

Presenter: KOSTIN, Roman (Fermi National Accelerator Laboratory)

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