

ACCELERATOR SEMINAR

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Thursday, November 16th, 2023 at 4 pm

Online-Seminar via Zoom

Zoom: (ID: 639 8399 7572/ PW: 713136)

Development of Double Drift Harmonic Buncher Concepts

Description

Particle accelerators for low and high-current beam applications require efficient bunching systems to ensure high particle transmission and reduced longitudinal emittance. The concept of "Double Drift Harmonic Buncher - DDHB" has been proposed as a compact and effective design for special applications. This system fulfills the requirements for both continuous wave (c.w.) and pulsed beam injection into various accelerator units such as an RFQ, a cyclotron, or a DTL. The primary focus of the investigations is to determine the acceptance rates accurately. In order to facilitate a comprehensive understanding of the DDHB concept, a new multi-particle tracking beam dynamics code named "Bunch Creation from a DC beam - BCDC" has been developed. This code enables detailed studies of space charge effects, allowing for precise calculations of intense DC beams into particle bunches with partial space charge compensation at various locations. This talk will be on the concept of DDHB, the results of a series of investigations, both with and without space charge effects, using the BCDC code.



Coordinator: Claude Krantz, Janet Schmidt
Secretary: Heidi Martinez/Paola Lindenberg



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