



Contribution ID: 1449 Contribution code: THPC76

Type: **Poster Presentation**

Discussion of space charge effects of a beam train containing infinitely many bunches

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

In an electron linear accelerator, the continuous beam emitted by the electron gun will become an equally spaced beam train after passing through the bunching section. If the current of the electron beam is large, its expansion caused by the space charge force between different bunches may be more substantial than the case where only a single bunch is considered. In this article, using an algorithm capable of calculating the space charge effects of a beam train containing infinitely many bunches with uniform spacing, we compare bunch trains with different parameters to find the pattern of their space charge effects.

Footnotes

Funding Agency

Paper preparation format

Region represented

Asia

Primary author: LI, Hongyu (Tsinghua University in Beijing)

Co-authors: SHI, Jiaru (Tsinghua University in Beijing); ZHA, Hao (Tsinghua University in Beijing); GU, Weihang (Tsinghua University in Beijing); FENG, Boyuan (Tsinghua University in Beijing); CHEN, Huaibi (Tsinghua University in Beijing)

Presenter: FENG, Boyuan (Tsinghua University in Beijing)

Session Classification: Thursday Poster Session

Track Classification: MC5: Beam Dynamics and EM Fields: MC5.D08 High Intensity in Linear Accelerators Space Charge, Halos