



Contribution ID: 699 Contribution code: WEPS023

Type: **Poster Presentation**

Study for limiting factors in transverse wiggler-based arbitrary correlation generation

Wednesday 4 June 2025 16:00 (2 hours)

Recently proposed transverse wiggler is an intriguing tool for imparting designed correlations in phase space. While several simulations have demonstrated its feasibility, the method using the transverse wiggler has several concerns need to be addressed. Beam evolution along the wiggler can introduce errors in the designed correlation. Wiggler fields have strong vertical position dependence, which can introduce unwanted horizontal and vertical couplings. The transverse wiggler generates both horizontal and vertical sinusoidal fields, which can significantly degrade the beam quality. Additionally, its applicability to heavy particles remains uncertain. We will present results from a preliminary study aimed at addressing these concerns.

Footnotes

Paper preparation format

LaTeX

Region represented

America

Funding Agency

Author: HA, Gwanghui (Northern Illinois University)

Co-author: TEMIZEL OZDEMIR, Buse Naz (Northern Illinois University)

Presenter: TEMIZEL OZDEMIR, Buse Naz (Northern Illinois University)

Session Classification: Wednesday Poster Session

Track Classification: MC5: Beam Dynamics and EM Fields: MC5.D09 Emittance manipulation, Bunch Compression and Cooling