



Contribution ID: 2306 Contribution code: WEPA025

Type: **Poster Presentation**

Space-charge limit in hadron synchrotrons induced by a gradient error

Wednesday, 10 May 2023 16:30 (2 hours)

The half-integer resonance is considered to be one of the strongest effects limiting the intensity of the FAIR SIS100 heavy-ion synchrotron which is currently under construction at GSI. Results of simulations under realistic synchrotron-operation conditions show that for bunched beams, a relatively small gradient error can result in a large half-integer stop-band width significantly reducing the maximum achievable bunch intensity. In addition to the results of simulations in SIS100, we characterize the half-integer stop band in SIS18 using experimental data.

Funding Agency

Footnotes

I have read and accept the Privacy Policy Statement

Yes

Primary author: RABUSOV, Dmitrii (Diamond Light Source Ltd)

Co-author: Dr OEFTIGER, Adrian (GSI Helmholtzzentrum für Schwerionenforschung GmbH)

Presenter: RABUSOV, Dmitrii (Diamond Light Source Ltd)

Session Classification: Wednesday Poster Session

Track Classification: MC5: Beam Dynamics and EM Fields: MC5.D07: High Intensity Circular Machines Space Charge, Halos