Contribution ID: **188** Contribution code: **TUP098**　　　　　　Type: **Poster Presentation**

Third Integer Resonant Extraction Transit Time Simulation Studies

Tuesday 12 August 2025 16:00 (2 hours)

In this work, we present the investigation of transit time of particles in the non-linear third-integer resonant extraction process. Transit time is defined as the number of turns a particle takes to get extracted once it is in the unstable region in the phase space, i.e., outside the triangular separatrix in case of third-integer resonance. The study of transit time is important because transit time directly contributes to the beam response time during resonant extraction and thus knowing it apriori would be practically useful in designing of the extraction system. In this work, we shall investigate the analytical derivation of the transit time of particles (to the first order Kobayashi Hamiltonian) in different parts of the phase space distribution and compare against the analytical results. We also compare the simulation result of the transit time of particles (with higher statistics) for the static as well as dynamic extraction conditions cases, particularly in the context of resonant extraction parameters for Mu2e experiment at Fermilab.

Please consider my poster for contributed oral presentation

Yes

Would you like to submit this poster in student poster session on Sunday (August 10th)

Yes

Footnotes

Funding Agency

I have read and accept the Privacy Policy Statement

Yes

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Session Classification: TUP: Tuesday Poster Session