



Contribution ID: 577 Contribution code: SUP081

Type: Poster Presentation

Study of uncorrelated resonance crossing in a controlled environment

Sunday 10 August 2025 15:00 (3 hours)

This paper deals with estimating spin depolarization in planned very high energy electron-positron storage rings like the FCC-ee. The paper covers three aspects of the work: 1) the putative so-called uncorrelated resonance crossing due to noise in the spin-rotation phase advance caused by photon emission in synchrotron radiation. This is expected to suppress the depolarization caused by synchrotron sideband resonances, 2) a study of the performance of our code on multiple high performance systems, and 3) the novel exploitation of a high order Magnus expansion applied to spin transport. The study uses Monte-Carlo spin-orbit tracking for a simple model of spin motion, the so-called single resonance model, augmented by the effects of radiation. The results presented here represent the first steps of a planned detailed large-scale exploration.

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No

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

Yes

Footnotes

Funding Agency

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Yes

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