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## Validation of the slice model used in the beam-beam simulation

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

The slice model is the theoretical foundation for various beam-beam simulation methods. In the formulation of the slice model, some approximations have been made based on the assumption of particle beams with an extremely high Lorentz factor. However, this assumption might not always be valid for the particle colliders applied in the nuclear physics study because of the usage of heavy-ion beams. It is thus worthwhile to verify the slice model in that parameter region. In this study, we investigate the theoretical formulations of the slice model and a full 3D model. Besides, we perform weak-strong simulations based on these two theoretical models. Results and their implications will be presented.

### Footnotes

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### Paper preparation format

LaTeX

### Region represented

North America

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