

Summary

- ❑ Bunch sizes and beam crossing configuration provide opportunity to derive the time of the collision from the position of the primary vertex
- ❑ Based on the model used to simulate beam effects in MC, T0 resolutions on the order of 20 to 25 pico seconds should be achievable by measuring the X and Z positions of the primary vertex within reasonable tolerances
- ❑ Beam energy combinations of 18x275, 10x100, and 5x41 in hi-divergence mode were compared: T0 resolutions for 18x275 and 10x100 were comparable and somewhat better than for 5x41
- ❑ Possible next step – look into EIC machine simulations of the interacting beams to confirm model predictions
- ❑ Additional information in the technical note on Beam Effects:
<https://zenodo.org/record/6514605#.Y0VOrS-B1qs>