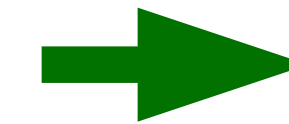


■ Online Tracking Efficiency

- Developed track segment finding for the online trigger
- Improved track candidate identification network
- Tests with background merging indicate significant improvement in tracking efficiency using the newly developed

■ Significant improvement in track reconstruction efficiency

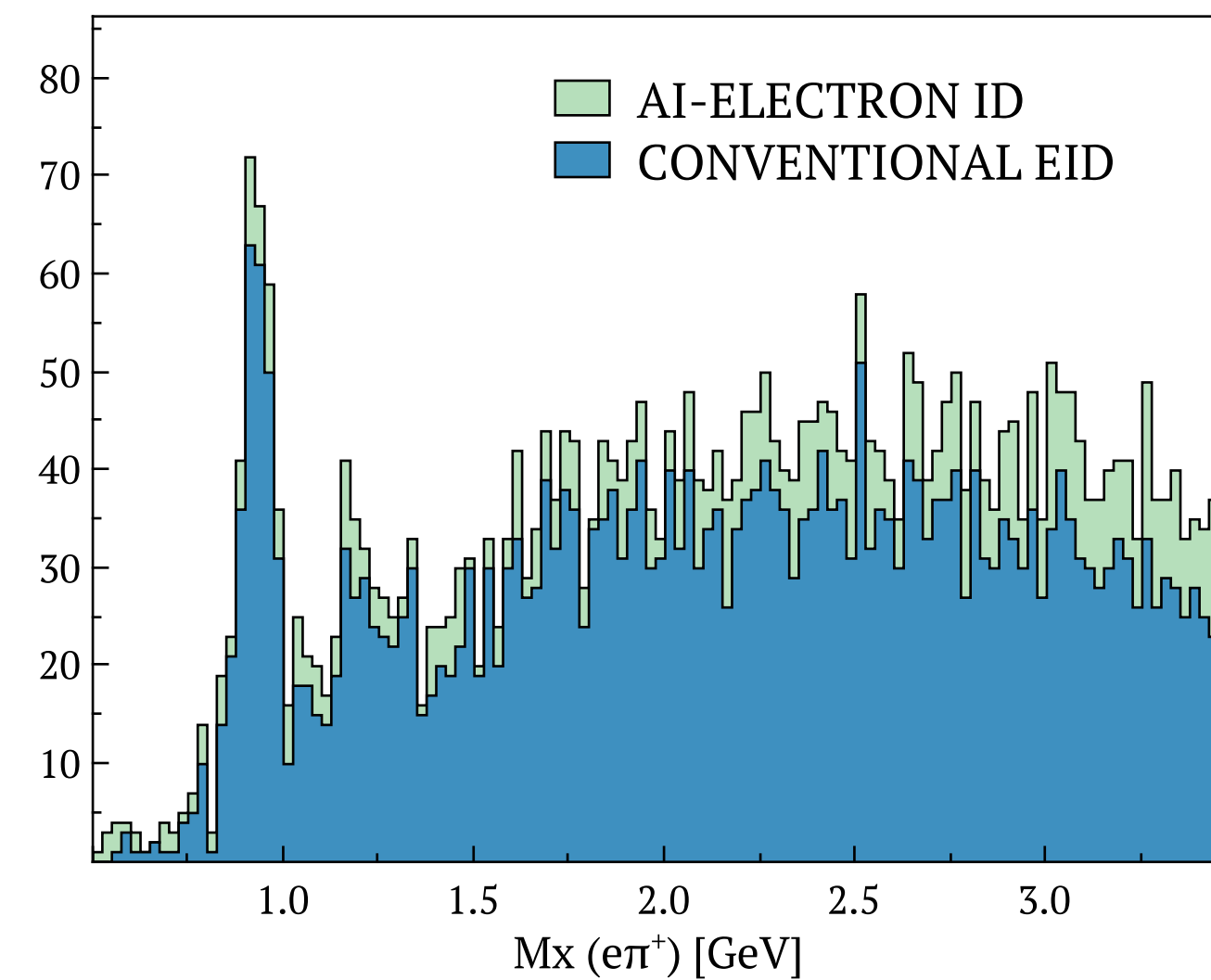


■ AI electron identification:

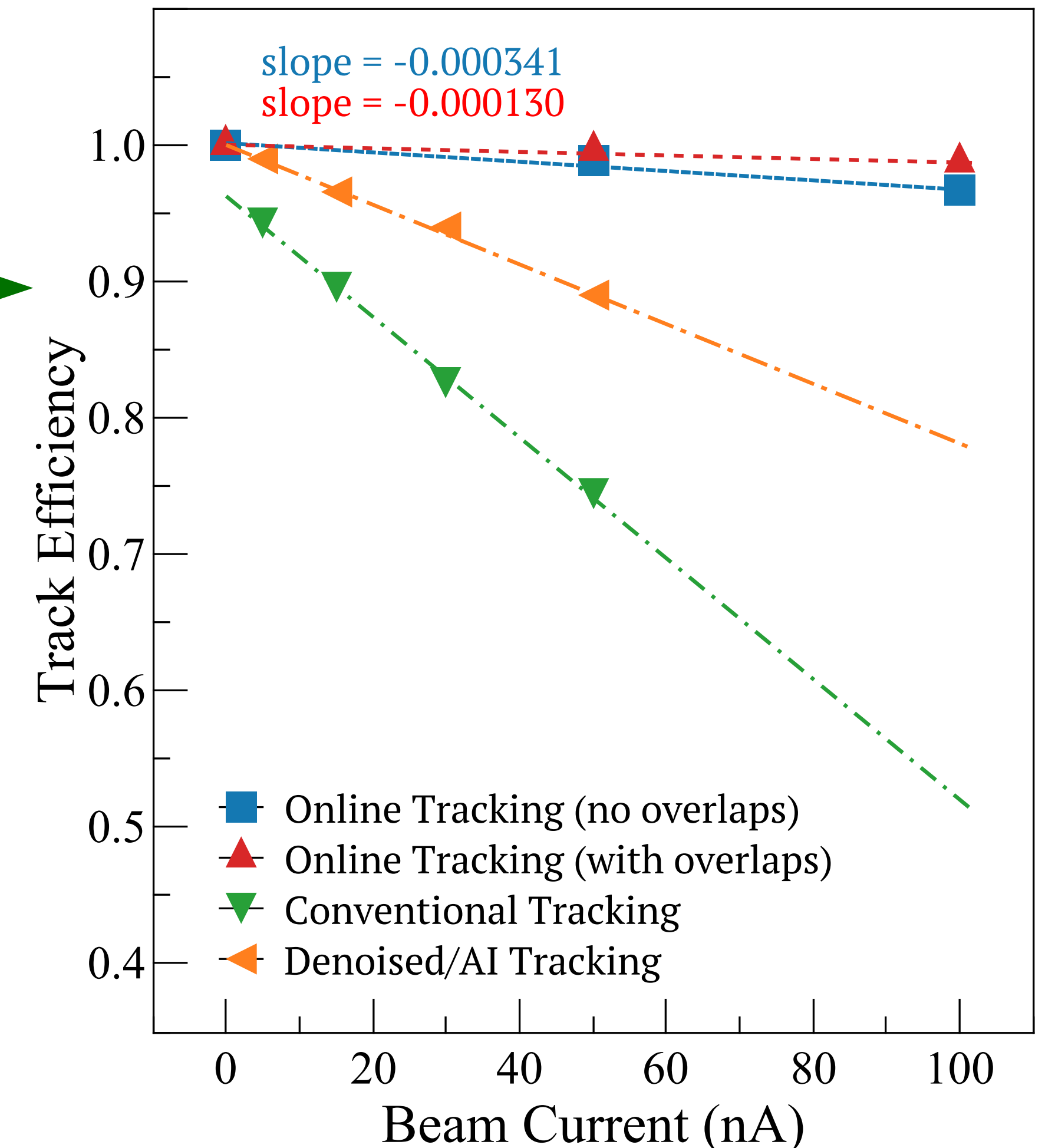
- The electron identification AI is developed
- Not yet integrated with the online workflow
- It's 98% efficient compared to the Level-1 trigger
- Improves the electron identification for the offline.

Not part of the Online Workflow

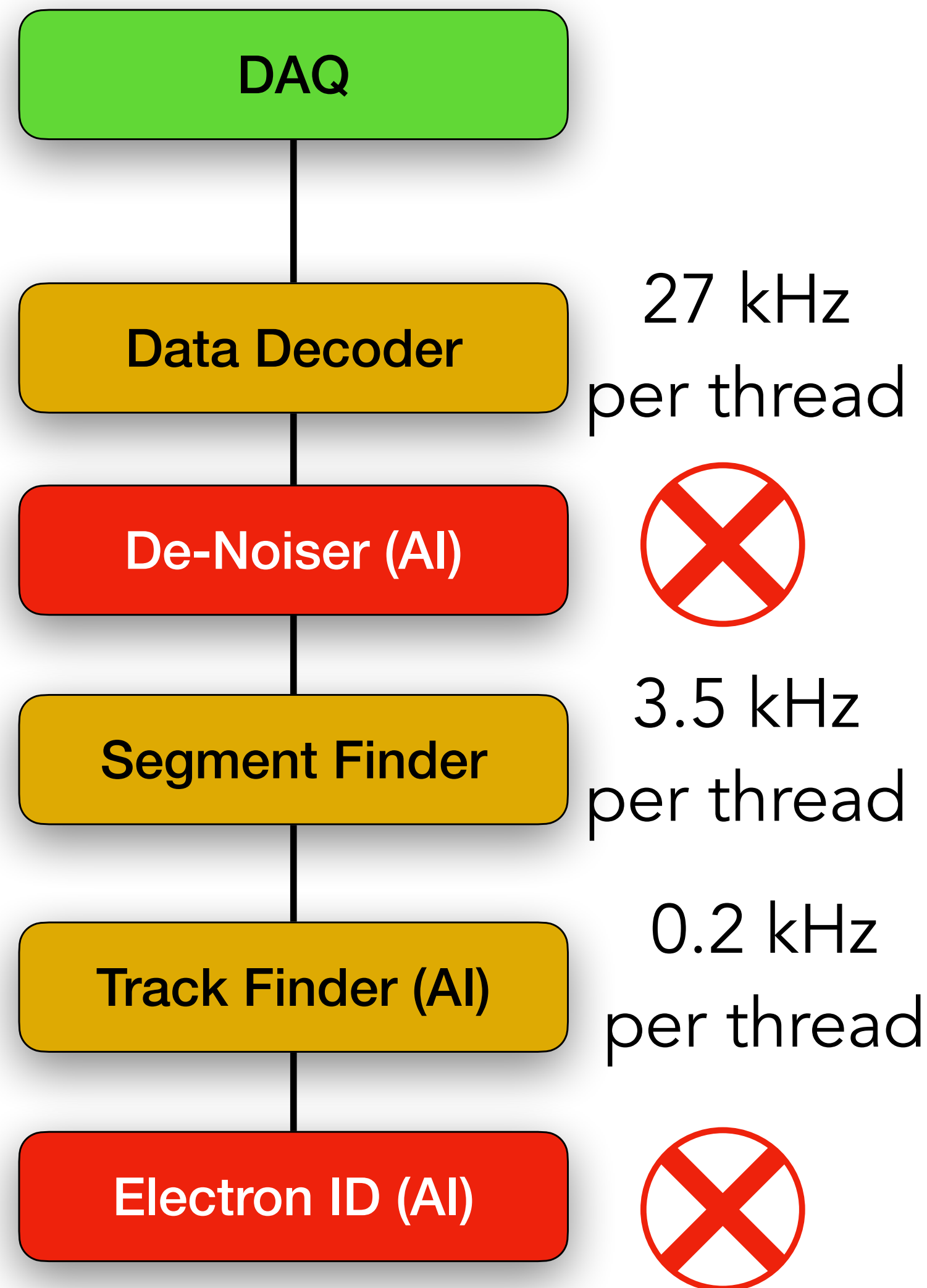
10-15% more efficient Electron Identification



The new development will help with high luminosity runs



All the results shown are very preliminary



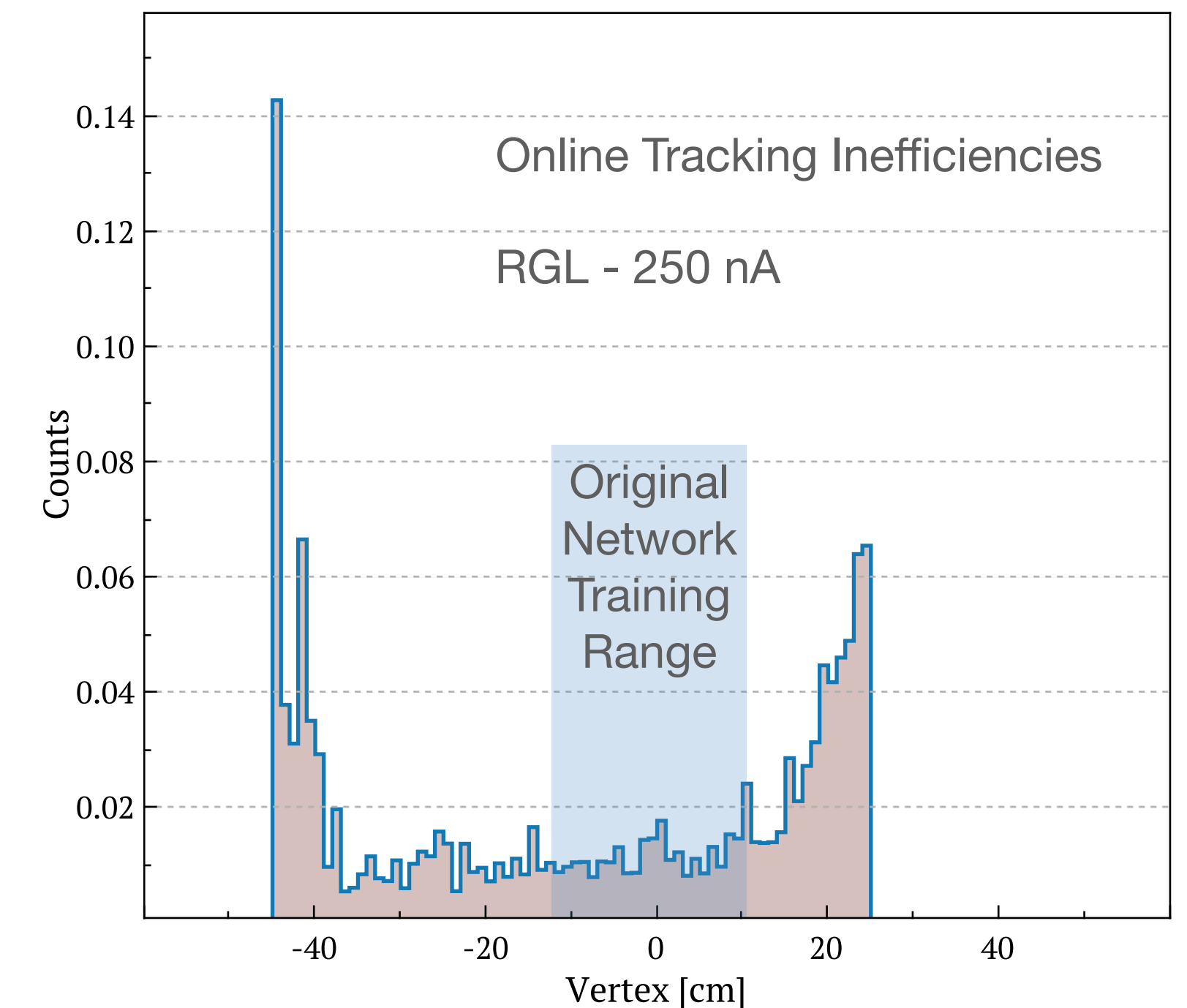
- Progress on the software infrastructure for running online:
 - Online data translation (decoding)
 - Fast segment finder (3.5 kHz/ per thread)
 - Track candidate finder (Neural Network)

2 kHz with 20 Cores

- Many overlapping segments:
 - Implement De-Noiser into the workflow
 - Improve Segment Finder Purity
 - Improve track candidate pre-selection before processing with AI

Test Run RGL

- RGL has a long target, network was not trained on
- There is no production data available for training
- The inefficiency in the target range of trained network is <2%



- The PostDoc position has not been filled. (The first candidate rejected the offer).
- Trying to repost the position, but it was rejected by management.

