



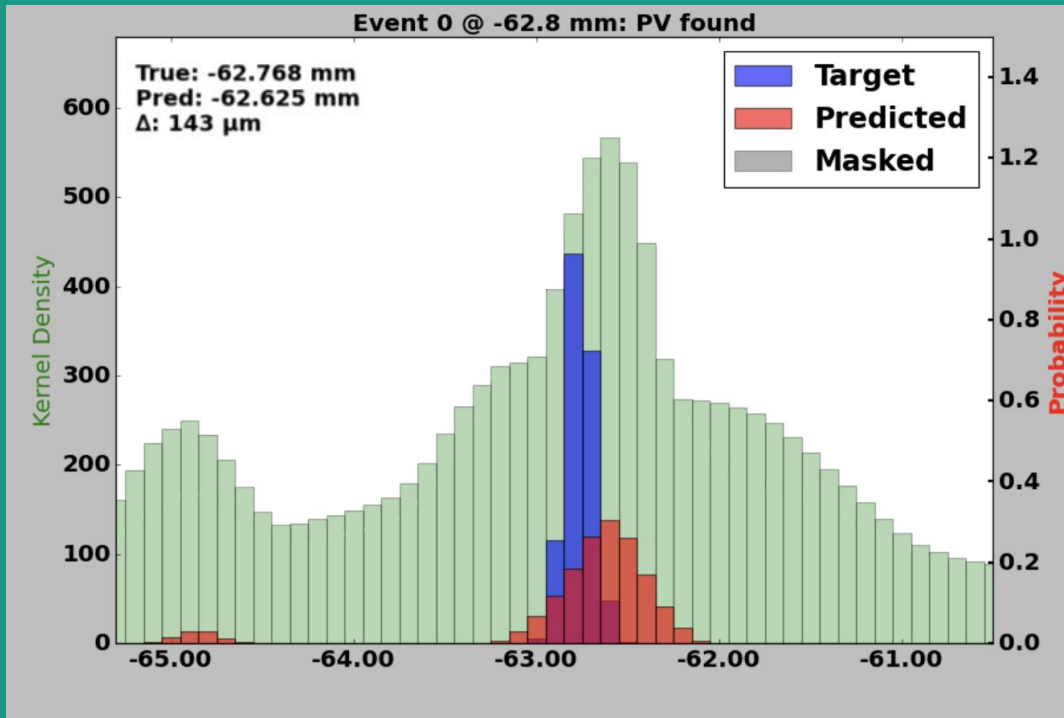
Adapting PV-Finder to the CMS and ATLAS Experiments

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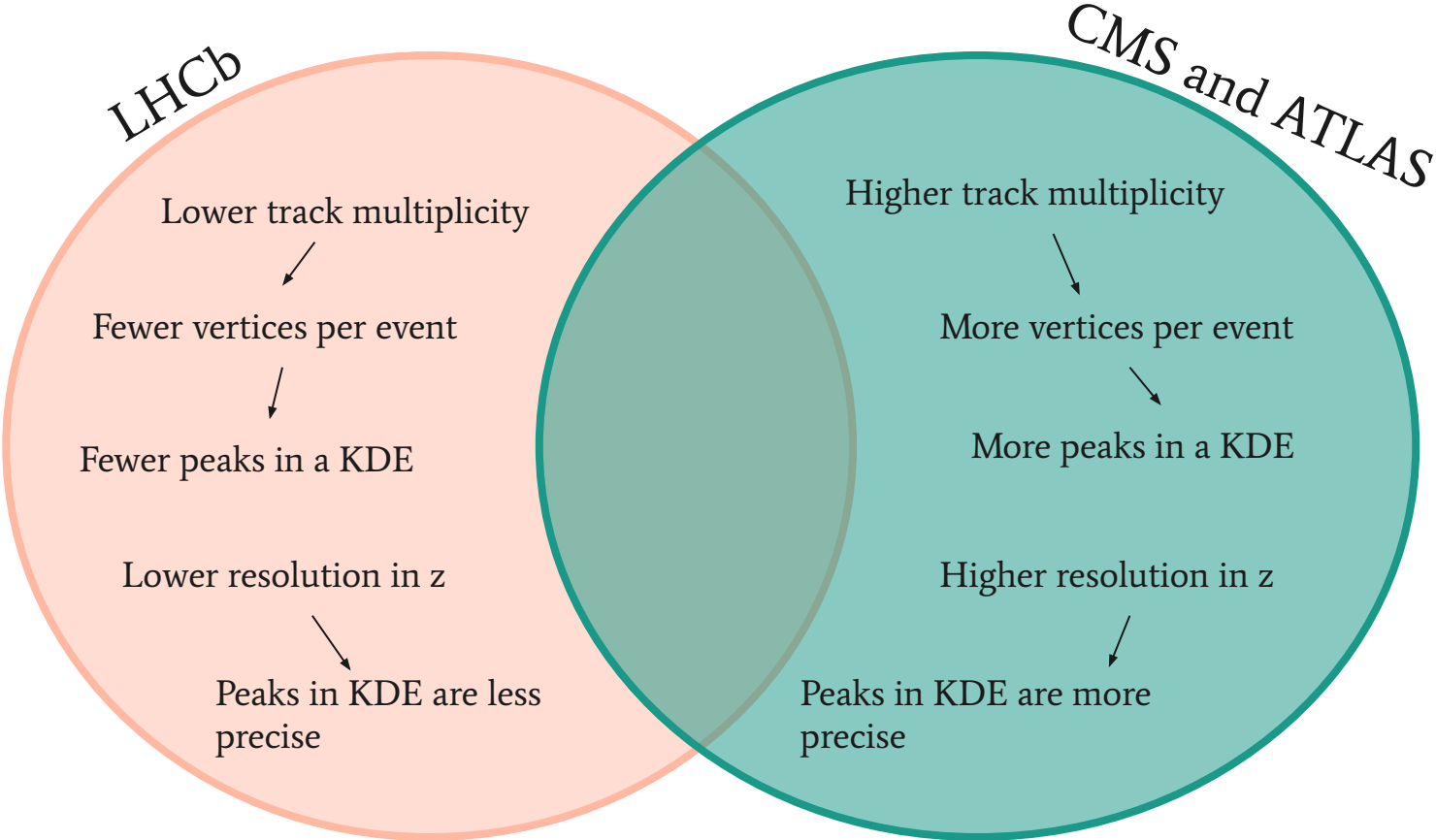
Mentors: Henry Schreiner (Princeton), Mike Sokoloff (University of Cincinnati),
Rocky Bala Garg (Stanford)

PV-Finder



- **Goal:** Use machine learning to determine the location of primary vertices using reconstructed tracks
- **Step 1:** Calculate the KDE (green), which represents track density along the beamline
- **Step 2:** Calculate target histograms using the truth vertices
- **Step 3:** Train a CNN using the KDEs (as well as a few related features)

LHCb vs. ATLAS and CMS



LHCb vs. CMS: KDE Comparison

