

ProtoDUNE Integration

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Introduction

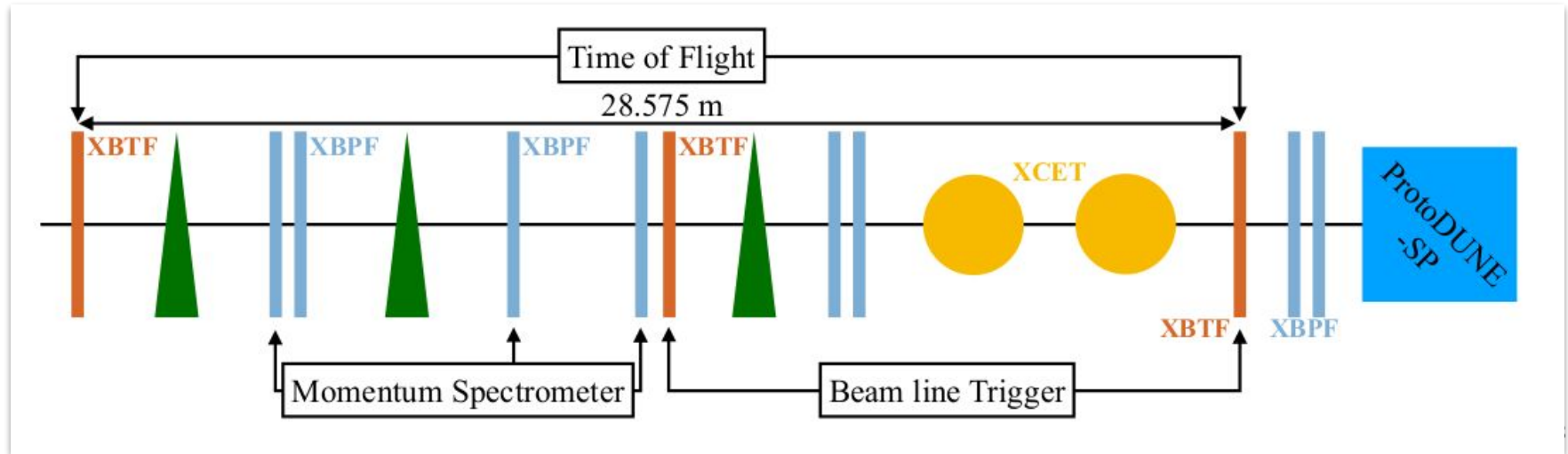
Will talk about my past and current effort regarding integrating ProtoDUNE computing needs

Includes:

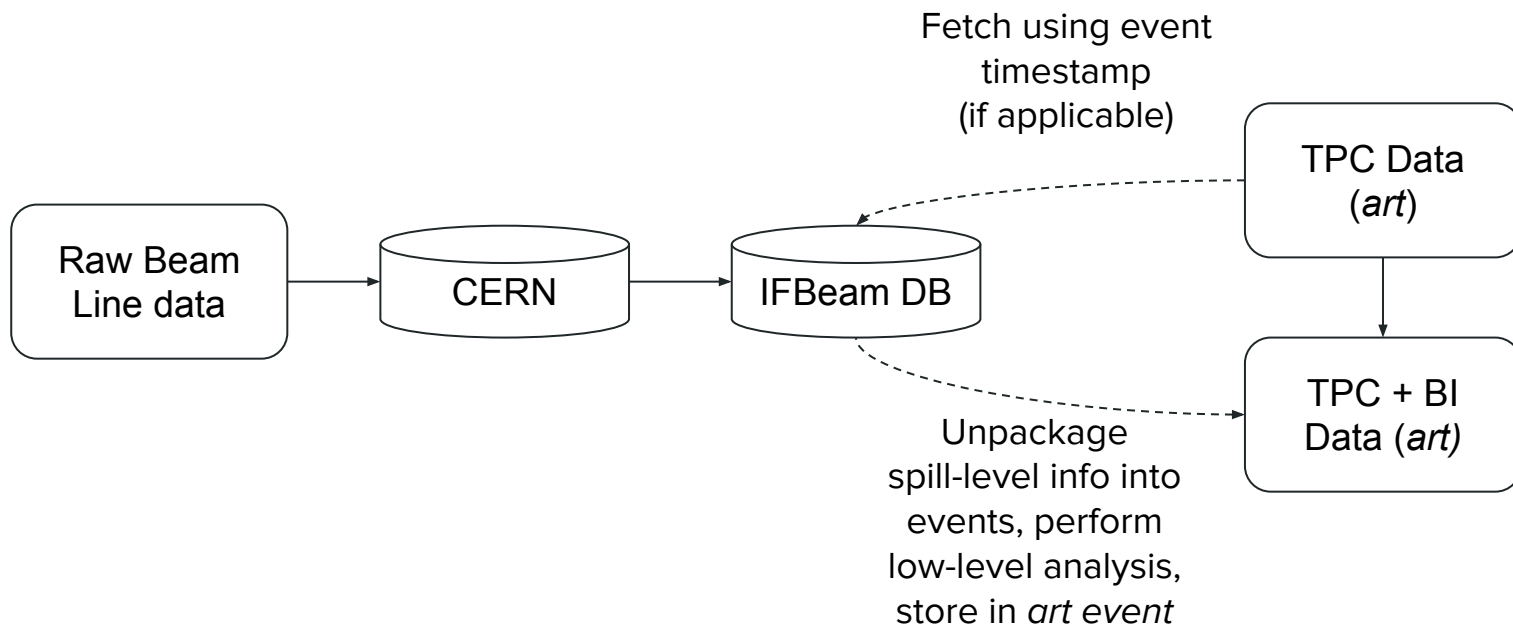
- Readout of NP04 beam line instrumentation in LArSoft (old)
- HDF5 readout (with Barnali)
- ProtoDUNE SP NTuples
- ProtoDUNE HD Coordination

NP04 (PDSP) Beam Line Instrumentation

Includes Cerenkov Dets. (yellow), scintillating fiber planes (blue), bulk scintillating planes (orange) for PID, triggering, momentum spectrometry, TOF



Integrating with LArSoft



HDF5 Readout

Last year, Barnali and I worked together on reading in HDF5 input and unpackaging it into *art*/ROOT format

Required new Raw Input source to be defined to facilitate opening up an HDF5 file and creating an *art* file from its contents

ProtoDUNE-SP NTuples

Historically, many in the ProtoDUNE analysis group(s) would use individual code/modules to unpackage data/MC for analysis

- Redundant work (and resources used)
- No consistency between individual analysis/data formats
- No reproducibility/version control
- Files were passed around by-hand/word-of-mouth

Heidi and I worked on creating a framework to produce standardized/centralized NTuples for the group

- Developed [NTupleProd](#) package to send off NTuple 'production' jobs and merge into [master files](#)
- Processed all momenta of Production 4/4a data and MC (SCE on/off)

ProtoDUNE-HD Coordination

Named ProtoDUNE-HD Offline Coordinator earlier this year

Tasked with preparing for the upcoming beam run of PDHD

Making sure production chain is ready for the new geometry

Implementing various modules for new calibration sources

- Laser system
- Neutron source

Thanks for Listening
