Far Backward
Pair spectrometer

University of York - University of Houston

ePIC Logo TBD

Far Backward Detectors

- ## Luminosity monitors
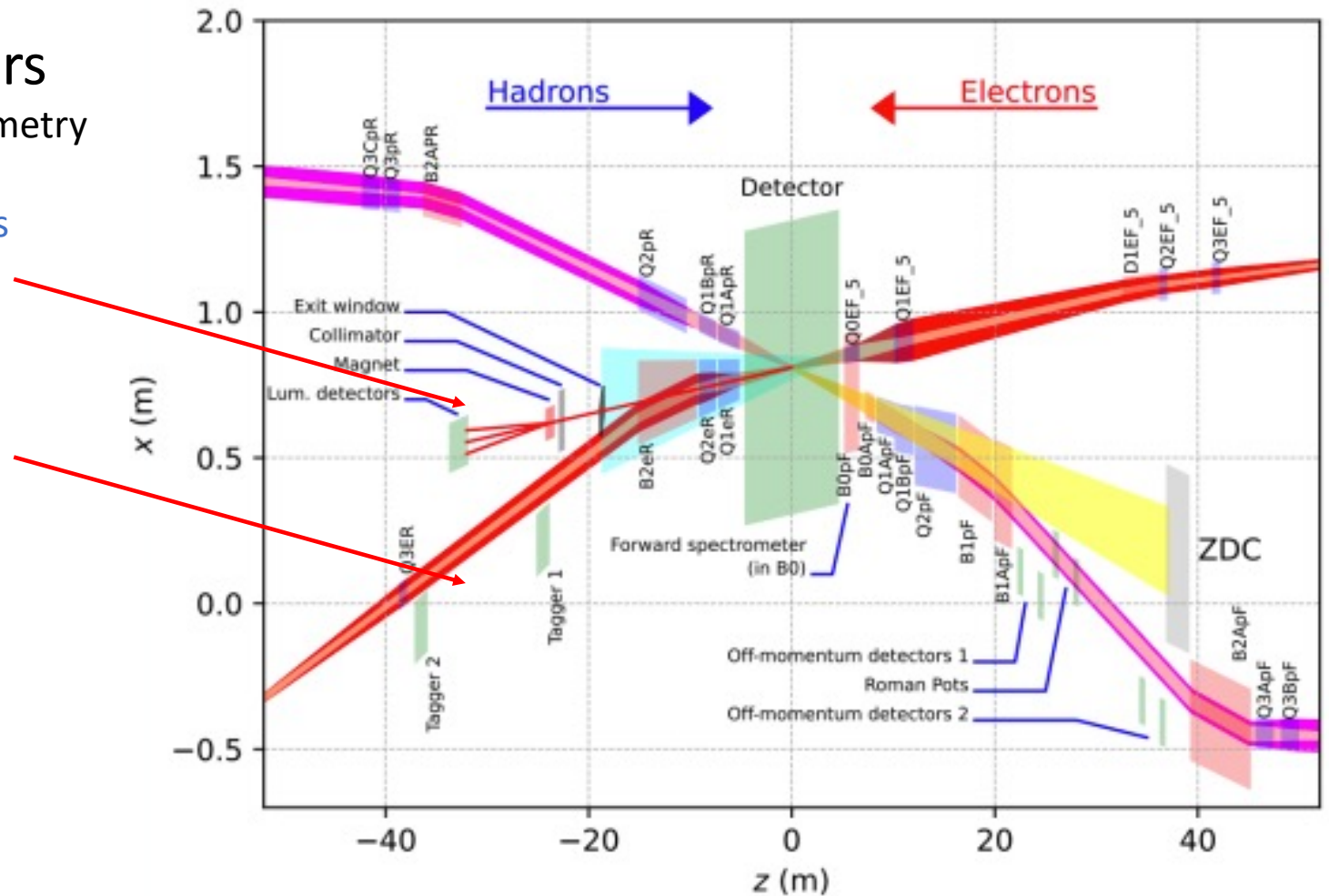Critical for x-section and asymmetry measurements
  - Direct Photon Detectors
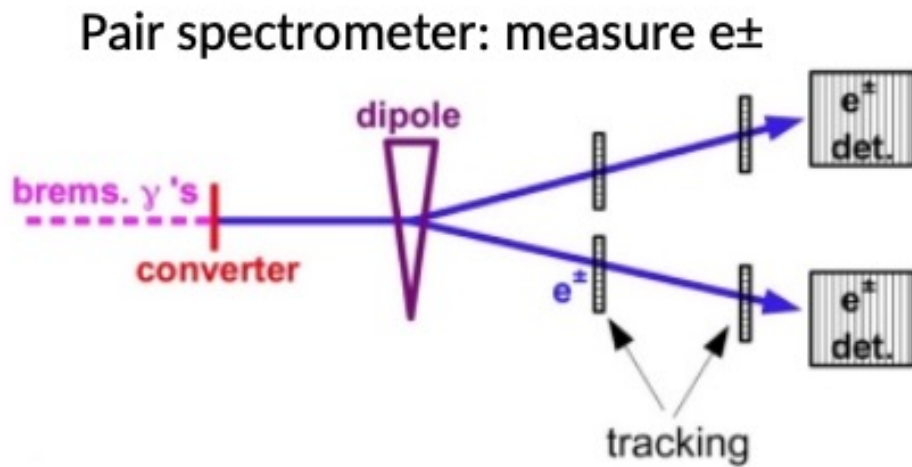 - Pair Spectrometer

- ## Low Q^2 taggers
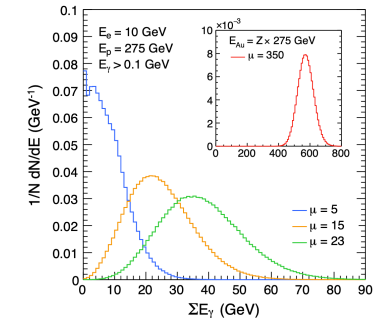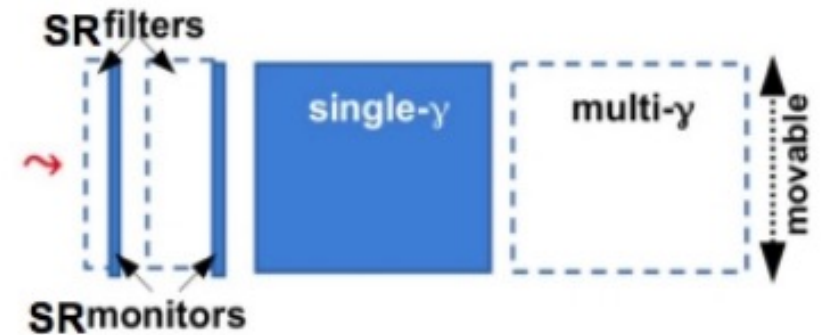Extend Q^2 coverage of DIS processes
Meson Spectroscopy (XYZ)
Timelike Compton Scattering
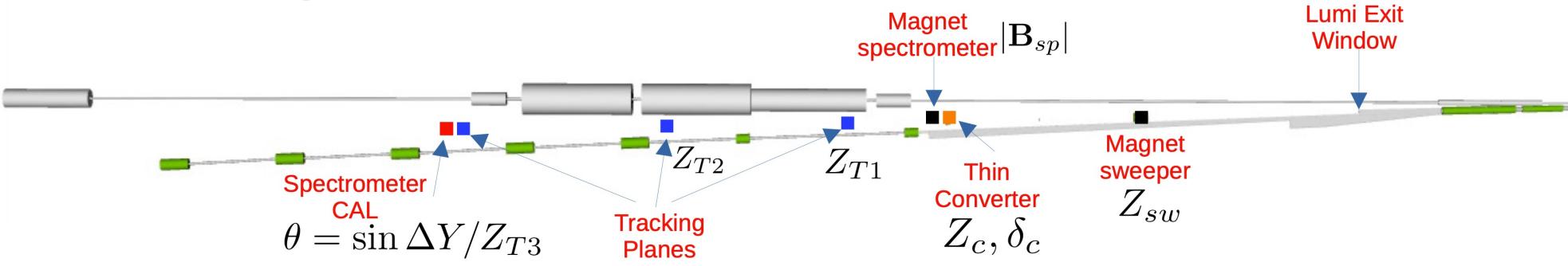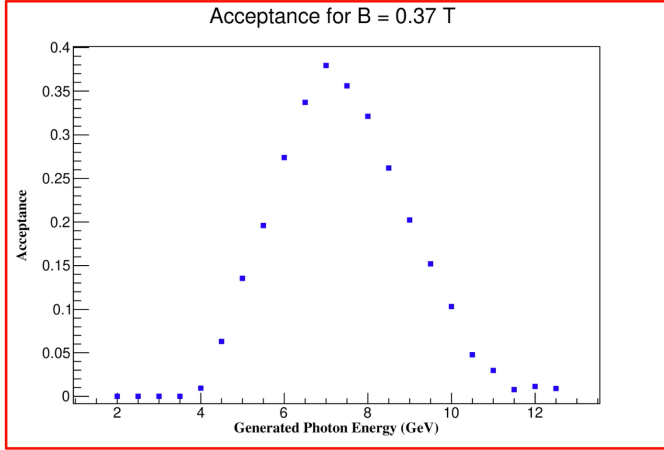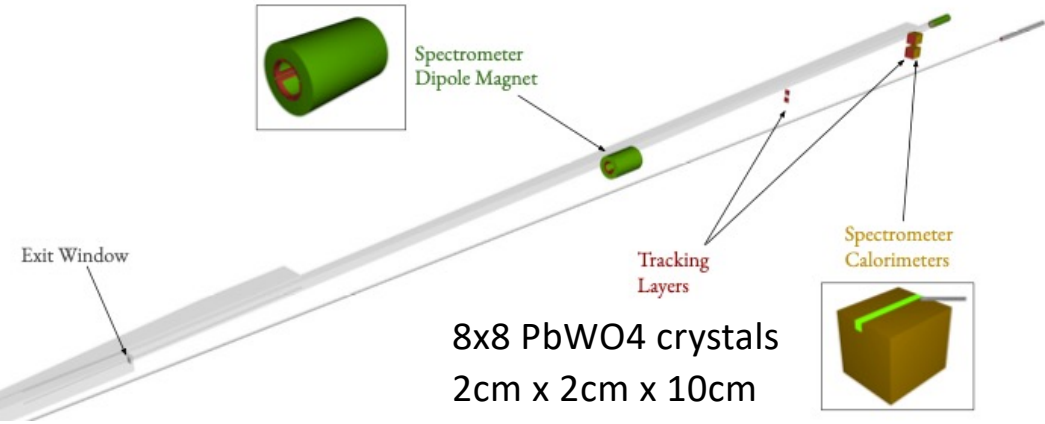
Luminosity Detectors

Pair spectrometer: measure e±

Photon calorimeter

Complementary measurements are needed to understand systematic errors related to detector acceptance, beam-size effects, event pileup and SR.

Pair Spectrometer

8x8 PbWO4 crystals
2cm x 2cm x 10cm

Acceptance for B = 0.37 T

$\theta = \sin \Delta Y / Z_{T3}$

Spectrometer CAL

Tracking Planes

Z_{T2}

Z_{T1}

Magnet spectrometer $|\mathbf{B}_{sp}|$

Thin Converter

Z_c, δ_c

Magnet sweeper

Z_{sw}

Lumi Exit Window

Detailed simulation studies are underway to:

- Optimize detector position

- Detector acceptance

- Sweeper magnet

- Dipole magnet

- Optimize converter and exit window

- Tracker layers and positions

- Radiation dose

University of York – CLAS12 Forward Tagger