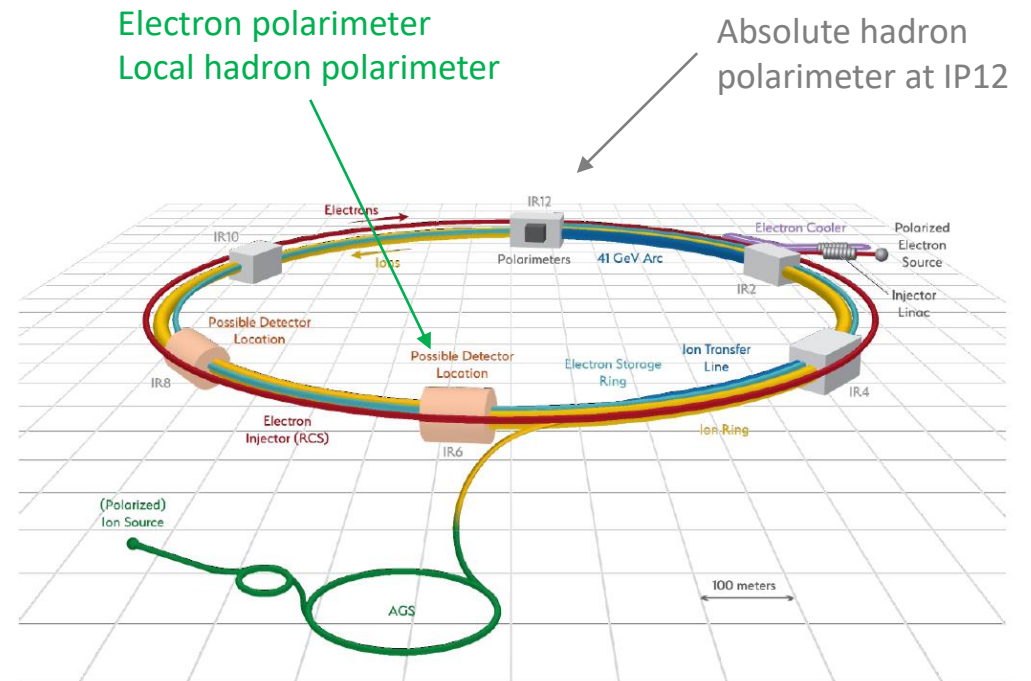


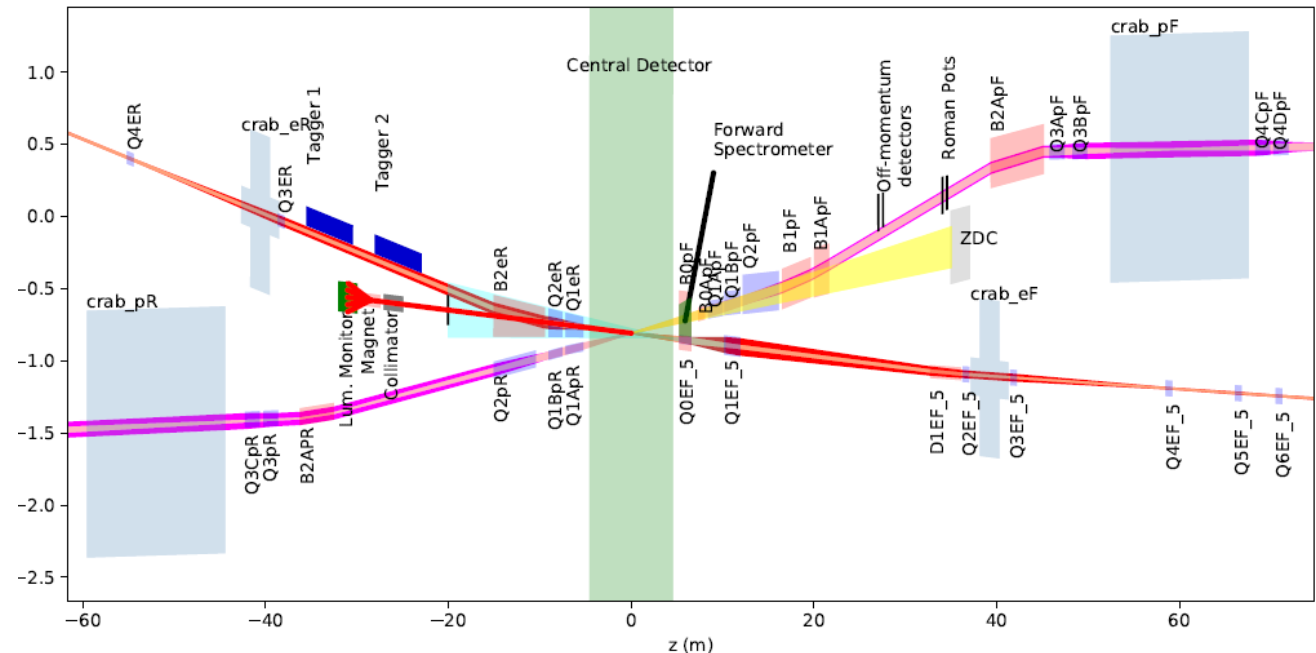
# Polarimetry

- Relevant for all proposals with polarized physics program
  - Oleg Eyser ([keyser@bnl.gov](mailto:keyser@bnl.gov))
  - Ciprian Gal ([ciprian.gal@stonybrook.edu](mailto:ciprian.gal@stonybrook.edu))
- **ATHENA** mailing list: [eic-ip6-det-pol-1@lists.bnl.gov](mailto:eic-ip6-det-pol-1@lists.bnl.gov)
- EIC UG working group on polarimetry/luminosity:
  - Elke Aschenauer, Dave Gaskell
  - **Mailing list:** [eicug-polarimetry@eicug.org](mailto:eicug-polarimetry@eicug.org)
  - <https://indico.bnl.gov/category/280/>
  - Monthly meetings → higher frequency for proposal specific topics



# Polarimetry

- **Hadron Polarimeter at IP6 (elastic recoil)**
- pC for relative polarimetry
- Inside of spin rotators / crab cavities
- Confirmation of polarization vector (start of fill)
- Polarization bunch profile (after crab rotation)
- Ultra-thin Carbon fiber targets may not be suitable for high bunch repetition rate at EIC
  - Beam heating will break targets
  - Other options for target material or target production



# Polarimetry

- **Electron Polarimeter at IP6 (Compton scattering)**
- Backscattered photon needs feedthrough for some magnets (machine integration)
- Available acceptance
- Calorimeter segmentation
- Effect of beam pipe/exit window
- Cross talk between longitudinal/transverse asymmetries
  - Longitudinal beam polarization → energy dependent asymmetry
  - Transverse beam polarization → spatial asymmetry
  - Transverse asymmetry of electrons is diluted through magnetic field

