Integrating Detector Measurement

- Toroid
- BPM
- C1C2
- Undulator
- Alignment Tolerances
  - Reversible
- Soft Bend
- Last existing hard bend
- Existing Permanent Magnets
- Magnetized Fe Target ~10cm
  - Reversible
- C3
- C4
- Sweeping magnet
- Threshold Detectors
  - Gas Cherenkov
  - Aerogel
  - Quartz fiber

- Pre-radiator 1-2 mm Pb
  - Vary thickness

E- beam ~$10^{10}$
γ beam ~$10^9$
Fe target AP ~1%
Counting Detector Measurement

Energy measurement
Identify which is $\gamma$ and e-

Alignment Tolerances
Reversible

Attenuator
Sweeping magnet

Soft Bend
Last existing hard bend

Undulator

Existing Permanent Magnets

Thin Magnetized Foil
~20 $\mu$m

Scintillators?

Detector Moller electron

Detector $\gamma$

Analysis Magnet?

E- beam ~$10^{10}$
$\gamma$ beam ~$10^9$
$\gamma$ beam after attenuator ~$10^6$
Compton scatters in Fe foil ~$10^2$
Coincidence Detector Acceptance ~1%

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Polarization Measurement of Short Pulse Gamma-Rays Produced at KEK-ATF

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The method of $\gamma$-rays polarization measurement

Cross section of Compton scattering

\[ A = \frac{N_+ - N_-}{N_+ + N_-} \]

\( (\sim 1\%) \)

Transmission depends on the direction of the magnetic field

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