High Energy Inelastic Scattering

Beamline : **BL08W**

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Subgroup : High Energy Inelastic Scattering

Scientific Applications: Magnetic Compton scattering,
High-resolution Compton scattering,
High-energy Bragg scattering.

Source Characteristics: Elliptic multipole wiggler
λu=12cm, N=37
Critical energy: 42.6 keV at K_y=11.2
Total power: 17.9kW at K_y=11.2
Peak power density: 160kW/mrad^2 at K_y=11.2
On-axis degree of circular polarization: 0.76 at 300keV,
K_y=11.2, K_x=0.6

Station A (for Magnetic Compton Scattering):

Magnetic Compton scattering spectrometer with a combination of a multi-segmented SSD detector and a superconducting magnet.

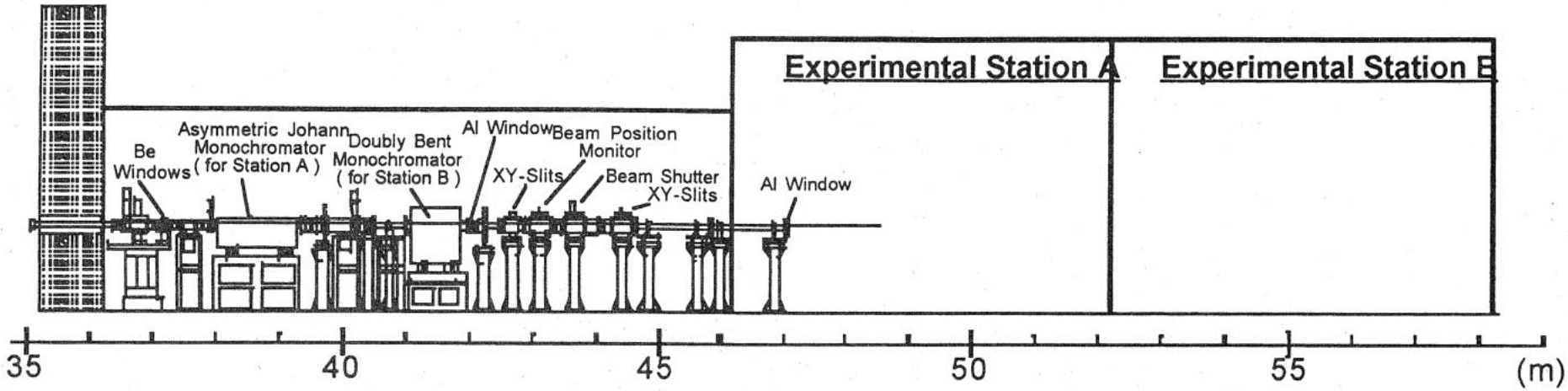
Optics: Asymmetric Johann monochromator, Si(771)
X-ray energy: 300keV
Energy resolution: $\Delta E/E = 5 \times 10^{-3}$
X-ray beam size at sample: 3mm(H) × 1mm(W)
X-ray flux at sample: 5×10^{12} ph/s at 300keV

Station B (for High-resolution Compton Scattering) :

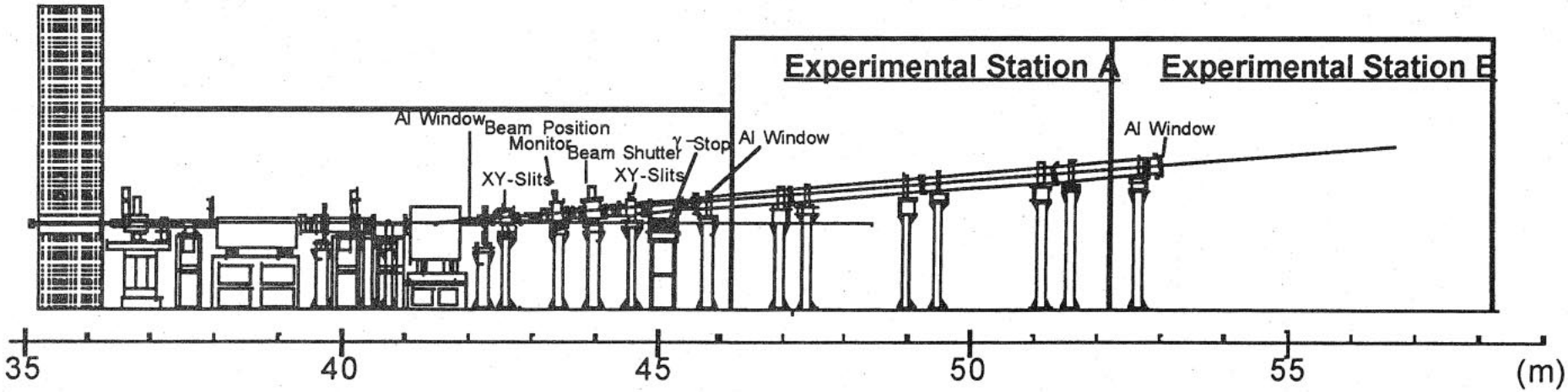
High-resolution Compton scattering spectrometer with a combination of a crystal analyzer and a CdTe position sensitive detector.

Optics: Doubly bent monochromator, Si(400)
X-ray energy: 100-150keV
Energy resolution: $\Delta E/E < 1 \times 10^{-3}$
X-ray beam size at sample: 0.5mm(H) × 0.5mm(W)
X-ray flux at sample: 3.3×10^{13} ph/s at 100keV

BL08W: High Energy Inelastic Scattering



(a) Experimental Station-A Branch



(b) Experimental Station-B Branch