Contribution ID: **27** Type: **Oral**

Design of an X-ray Ionization Beam Profile Monitor for Korea-4GSR

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A photon beam generated by the Insertion Device (ID) of a synchrotron light source can be contaminated by radiation from upstream and downstream bending magnets, leading to position measurement errors in blade-type monitors. The operation of the Korea-4GSR, which has extremely low emittance, is particularly sensitive to photon beam position variations, necessitating more accurate position measurements. To robustly measure the position and simultaneously obtain the profile of a photon beam in a non-destructive manner, we are developing an ionization profile monitor.
We designed a noble gas environment to ensure adequate signal strength and incorporated a defocusing electrode structure to fully utilize the relatively large active area of the readout. Since magnification in the defocusing field depends on the vertical position, we proposed a calibration method to correct the non-linearity, which we then verified through particle tracking simulation.

Best Presentation

Yes

Paper submission Plan

No

Contribution track

ICABU WG2. Beam Physics, Diagnostics & Novel Techniques

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