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## Longitudinal phase space measurement using a corrugated metallic dechirper at PAL-XFEL

*Wednesday, 22 May 2024 16:00 (2 hours)*

We present the experimental results of the longitudinal phase space measurement using the wakefields driven by the dechirper wall. In the soft X-ray line of the PAL-XFEL (Pohang Accelerator Laboratory, X-ray Free Electron Laser), the dechirper composed of 1-meter-long corrugated metallic walls is located at the upstream of the undulator section. When the electron bunch travels through the corrugated plate, a strong transverse wakefield can be generated, resulting in a transverse kick to the trailing electrons in the bunch. The horizontally deflected bunches were monitored on the screen monitor at the undulator downstream and we also observed bunch images through a vertically bending magnet at the beam dump. In this way we measured the XY beam profile, in which the X and Y axis represent the time structure and the energy spread of the bunch, respectively. Finally we will also discuss the use of passive deflector to measure the longitudinal phase space of electron beams influenced by FEL generation.

### Footnotes

### Funding Agency

### Paper preparation format

LaTeX

### Region represented

Asia

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