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# Design and development a measurement system for magnetic tuning of undulator magnets

*Wednesday 4 June 2025 16:00 (2 hours)*

The permanent-magnet in-vacuum undulator technique is critical for the Taiwan Photon Source(TPS) at the National Synchrotron Radiation Research Center(NSRRC). Before installing the magnet arrays in the vacuum chamber, the phase error of the undulator is optimized by adjusting the magnetic field. Optimizing phase errors is a complex and time-consuming task. The conventional measurement method involves using Hall probes to measure the magnetic field and a stretched-wire(SW) to measure the integral field of the undulator. In this work, we propose a method for tune the local magnetic field by utilizing the correlation between the gap and the magnetic field. We have demonstrated that using gap sensors allows us to more effectively determine whether to tune the magnetic field of the upper or lower magnet array. Additionally, we have demonstrated for the first time the use of the pulsed wire measurement (PWM) method for magnetic sorting.

## Footnotes

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Asia

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