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MAGNETIC MEASUREMENTS AT THE ADVANCED PHOTON SOURCE

The Advanced Photon Source (APS) has successfully completed a major upgrade, transitioning its storage ring from a 7.0-GeV double-bend lattice to a 6.0-GeV multi-bend achromat (MBA) design. The efforts involved the fabrication, measurement, installation, and commissioning of:

- 1,380 storage ring magnets
- 46 new hybrid permanent magnet undulators (HPMUs)
- 26 existing HPMUs (refurbished)
- 13 phase shifters
- 8 superconducting undulators (SCUs)

Meeting demanding field requirements within a tight schedule posed a significant challenge. However, rigorous testing ensured all magnets and undulators met specifications before installation in the new storage ring. This presentation will detail the APS magnetic measurement facilities, the tuning and measurement procedures, along with the achieved results.

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