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APS Undulator A Radiation - First Results

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First results from the measurements of undulator radiation at the Advanced Photon Source are very satisfactory. The absolute spectral flux measured over a wide range of photon energies agreed well with the theoretical calculations. A crystal monochromator was used to record the flux distribution up to seventeenth harmonic from the undulator at a gap of 15.8 mm (or $K \sim 1.5$). The x-ray image of the source using a zone plate was obtained and the divergence of the 1st harmonic of undulator radiation was measured. The measurements provide preliminary diagnostics of the undulator radiation beam. The overall performance of the Undulator A is consistent with the magnetic measurements performed on the device.

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