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Wed-Af-Po3.16-10 [27]: Magnetic Field Optimization of an In-Vacuum Undulator at NSLS-II

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A 3m long In-Vacuum Undulator (IVU) is employed at the National Synchrotron Light Source II (NSLS-II) for the Hard X-ray Nanoprobe (HXN) beamline providing structural and X-ray fluorescence imaging with world-leading spatial resolution. On July 1st 2018 a gearbox shaft in the gap drivetrain assembly sheared due to stress caused by mechanical misalignment. The device was extracted from the storage ring and measured. The magnetic field measurements detected a degradation of the magnetic performance as well as a demagnetization of the magnetic modules of the first 3 upstream periods. This paper describes the phase shimming optimization and the gap taper adjustments implemented to restore the spectral performance of the device.

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