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## Magnetic characterization and phase error tuning of a 1.5 m-long NbTi SCU for the Advanced Photon Source

*Tuesday, 21 May 2024 16:00 (2 hours)*

Prior to assembly into the operational cryostat each superconducting undulator (SCU) at the Advanced Photon Source undergoes testing in a LHe bath cryostat where coil training and magnetic measurements are performed. If necessary, the baseline magnetic measurements are used for phase error tuning which is achieved by adjusting the magnetic gap of the SCU at prescribed locations. An optimization routine using a genetic algorithm is used to determine the magnitude of the gap change. Once complete, the SCUs are incorporated into the production cryostat and magnetic measurements of the final assembly are performed. Details of the process during phase error tuning and LHe bath testing of a 1.5 m-long SCU magnet are presented.

### Footnotes

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North America

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