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Pulsed wire magnetic field measurements for an in-vacuum undulator

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An in-vacuum undulator is important for synchrotron radiation. An in-vacuum undulator with a permanent-magnet is used by the Taiwan Photon Source (TPS) in the National Synchrotron Radiation Research Center (NSRRC). Before installation in the storage ring, the magnetic field of the undulator is measured at the operational gaps. The magnetic-field for an in-vacuum un-dulator is measured using a Hall-probe and a stretched-wire measurement system. This study uses a pulsed wire magnetic field measurement system for an in-vacuum undulator. A reference magnet with a known magnetic field is used to determine the magnetic field profile for an in-vacuum undulator and it is demonstrat-ed that the oil dampers crucial to eliminating dispersion waves for the pulsed wire measurement. The results are used to compare the magnetic field measurements that use a pulsed wire with those that use a Hall probe.

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Footnotes

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Yes

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