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An in-vacuum measurement system for CPMUs at Diamond Light Source

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An in-vacuum Hall probe measurement bench was designed, built, and used to measure four Cryogenic Permanent Magnet Undulators (CPMUs) at 77 K at Diamond Light Source. The devices were tuned to correct the phase error at cold temperatures based on the measurements from the in-vacuum bench. The in-vacuum bench consists of a stretched wire system supplied by Danfysik and the in-house Hall probe bench. The Hall probe bench has gone through two iterations: the first was prone to deforming with temperature changes; the second was made thicker following design changes to the magnet holders and girders of the CPMUs which allowed more space for the bench inside the vacuum vessel. The design and commissioning of the bench will be presented, along with some measurements of the CPMUs at room temperature and at 77 K. Details such as height compensation, temperature compensation, and triggering of the Hall probe measurements will be covered.

Funding Agency

Footnotes

I have read and accept the Privacy Policy Statement

Yes

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