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Magnetic Measurements on the Twin Aperture Orbit Correctors for HL-LHC at IMP

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The Large Hadron Collider (LHC) upgrade, called High Luminosity LHC (HL-LHC) is planned for the next decade. A set of twin aperture beam orbit correctors positioned on the approaches to the ATLAS & CMS experiments will be developed. Two institutes IHEP (Institute of High Energy Physics), IMP (Institute of Modern Physics), and one company in China will work on the magnet R&D and series production. IMP in charge of the performance test both at ambient and cryogenic temperatures, the first China-Built model (MCBRDP2) has been tested recently. In this paper, the test setup for magnetic measurements, the 2.3m-long rotating coil probe, and the instrumentation being used at IMP are presented. The measurement results, in terms of field quality, effects of iron saturation, as well as magnetic cross-talk are discussed.

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