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Measurement of magnetic field characteristics using the stretched wire system

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In order to explore an efficient and accurate method for measuring the magnetic field information of accelerator magnets, this paper used the stretched wire system to measure a quadrupole magnet prototype of Hefei Advanced Light Source. In the measurement process, the integral field of the magnet at multiple points was first measured to calculate the magnetic center and multipole components of the magnet, and the influence of various measurement methods on the multipole components of the magnet was explored. Furthermore, the method of measuring magnet deflection angle using the stretched wire system and the method of correcting multipole components through magnet deflection angle were explored. The measurement results indicate that the stretched wire system has sufficient functionality and accuracy to measure the magnetic field information of the magnet.

Footnotes

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Author: LIU, BaoHou (University of Science and Technology of China)

Presenter: LIU, BaoHou (University of Science and Technology of China)

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