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Pre-alignment strategy for magnet units in the Hefei Advanced Light Source storage ring

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The storage ring of the Hefei Advanced Light Source includes 120 magnet units, each of which is composed of 4-8 magnets with adjustment mechanisms placed on a rigid support. In order to improve the overall efficiency and accuracy of the alignment installation, we will complete the overall pre-alignment of the magnet unit in an independent laboratory with a good environment based on the vibrating line magnetic measurement technology and FLTMMS technology, and then transport the magnet unit as an independent element to the site for alignment installation. This paper elaborates on the specific implementation process of this strategy and the technical solutions adopted to improve the accuracy, such as instrument layout optimization, damping and vibration reduction. Through accuracy estimation and actual measurement verification, the implementation of this strategy can effectively ensure that the Hefei Advanced Light Source project can efficiently achieve the pre-alignment accuracy index requirements.

Footnotes

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