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Magnetic measurement of Iranian Light Source Facility quadrupole storage ring prototype

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Abstract

Magnetic Measurement Lab is one of the most significant divisions of Research and Development (R&D) Lab of Iranian Light Source Facility. The main duty of this lab is to measure and check qualification of the accelerator magnets, including permanent and electromagnets, being applied in Iran for the first time. The ILSF measurement lab consists of precise measurement equipment, in proportion to synchrotron needs, such as Hall Effect probe measurement bench, rotating coil and Helmholtz coil. Recently, the lab has been provided with Hall probe measurement bench and uncompensated rotating coil and has made it possible to measure prototype magnets. In this article, the results of measuring quadrupole prototype are studied using Hall probe and rotating coil, to determine and compare errors in measuring multipole magnets and their sources.

Keywords: magnetic measurement, Hall probe, rotating coil

For full article, refer to the Persian section