



MT 26
International Conference
on Magnet Technology
Vancouver, Canada | 2019

Contribution ID: 682

Type: **Poster Presentation**

Thu-Mo-Po4.03-02 [13]: Development of rotating coil measurement system

Thursday 26 September 2019 08:45 (2 hours)

A rotating coil measurement system was developed for the DC magnets of the CSNS accelerator. This system solves the compatibility problems of different center heights, masses, effective lengths, and magnetic field strengths among CSNS bulk magnets. After testing, the repeatability error of the integral field measurement is less than $\pm 0.02\%$, the repeatability error of harmonics are less than 0.005% , the repeatability error of the magnetic center measurement is less than $\pm 0.03\text{mm}$. It successfully completed the task of detecting 150 magnets of the Chinese spallation neutron source. In this paper, the development plan, function, accuracy, types of finished magnets and some measurement results are introduced.

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Session Classification: Thu-Mo-Po4.03 - Novel Diagnostics and Other Techniques