Contribution ID: **1525** Contribution code: **WEPL050** Type: **Poster Presentation**

Design, fabrication and measurement of a normal conducting quadrupole for a laser-plasma-accelerator-based beam transport line

Wednesday, 10 May 2023 16:30 (2 hours)

For an experimental setup at the laser plasma accelerator (LPA) at the JETi Laser at Jena, Germany, an energy upgrade of a linear beam transport line has been studied. The transport line, originally designed to match the LPA beam to a transverse gradient undulator (TGU) at 120 MeV and successfully experimentally tested in 2014, will be upgraded to up to 300 MeV by employing stronger focusing quadrupoles. For these high strength quadrupoles, magnetic simulations as well as cooling and electrical calculations have been done. To develop fabrication procedures and magnetic measurement techniques, a prototype of the quadrupole magnet has been manufactured and tested at Karlsruhe Institute of Technology, Germany.

This paper is presenting the design, fabrication and magnetic measurement of the first prototype quadrupole magnet.

Funding Agency

Footnotes

I have read and accept the Privacy Policy Statement

Yes

Primary author: NING, Maisui (Karlsruhe Institute of Technology)

Co-authors: BERNHARD, Axel (Karlsruhe Institute of Technology); FATEHI, Samira (Karlsruhe Institute of Technology); MUELLER, Anke-Susanne (Karlsruhe Institute of Technology)

Presenter: FATEHI, Samira (Karlsruhe Institute of Technology)

Session Classification: Wednesday Poster Session

Track Classification: MC7: Accelerator Technology and Sustainability: MC7.T09: Room Temperature Magnets