



Contribution ID: 889

Type: **Poster Presentation of 1h45m**

Field Measurement of a Pulse Bending Magnet for a Beam-Switching System in the J-PARC

Tuesday 29 August 2017 13:15 (1h 45m)

At the Japan Proton Accelerator Research Complex, a new experimental facility called the Transmutation Experimental Facility (TEF) is planned for the Accelerator-Driven System. The TEF facility will use the 400 MeV proton beam from the LINAC, which requires introducing a beam switching system at a Beam Transport from the LINAC to the 3GeV Rapid Cycling Synchrotron (RCS). A pulse bending magnet is one of key components of the beam switching system. To supply the beam to the TEF in addition to the beam operation of the RCS and downstream facilities, the LINAC should be operating in 50Hz. And half of the beam pulses of 25 Hz will be injected into the RCS and the other half will be delivered to the TEF. Thus the pulse bending magnet may repeat turning on and off operation in 25Hz. In this case, it is essential to assess not only a magnetic field in excitation but also a residual magnetic field at zero current. A magnetization curve (B-H curve) of the iron core of the pulse bending magnet is a key parameter to calculate the field accurately by the 3D field simulation code (OPERA 3D). Ring samples of the same production lot were made and the B-H curves were measured in detail.

In this presentation, we will report field measurement results of the pulse bending magnet. And the comparison with the calculation results by using the measured B-H curves will be also introduced.

Submitters Country

Japan

Author: Dr YOSHIMOTO, Masahiro (JAEA/J-PARC)

Co-authors: Dr KINSHO, michikazu (JAEA/J-PARC); Dr OKABE, Kota (JAEA/J-PARC)

Presenter: Dr YOSHIMOTO, Masahiro (JAEA/J-PARC)

Session Classification: Tue-Af-Po2.02

Track Classification: A2 - Resistive Accelerator Magnets