SuperFRS Magnetic Measurements

B180 SC magnet test facility - Progress meeting #5

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Overview

- Long multiplet – preliminary measurement (5 current levels)
  - Single Stretched Wire done:
    + LongQ magnet,
    + Sextupole (B) magnet,
    + Crosstalk
    + field quality, harmonics, magnetic center, roll, pitch, yaw, sag
    + Demagnetization cycles done
    - Hard drive of SSW stage needs to be replaced

- 4.5 days - results communicated to GSI

- Detailed however tentative program for all the measurements agreed incl. additional crosstalk requests from GSI beam optics
Graded coils surface calibration

- Cross calibration using TF – no agreement – cause is either mechanical or electronic (cable connector) **Cross calibration necessary in FAIR Dipole**
- Absolute error similar to standard coil but because of smaller surface relatively bigger

Issues:

- Towards last measurement pulling cable issue - necessary replacement/reinstallation
- During replacement broken 3D printed part – replacement was produced (but non 3D)
Translating Fluxmeter – calibration results

Longitudinal pseudo-harmonic components distribution in M113 dipole magnet

Integral homogeneity of M113 dipole magnet:
LQ & SEXT(B)

Transfer function difference sextupole LM (SEXT B) - SM

Long Quadrupole TF: SM - LM