

## Agenda

1. Beam tube extension for GP-SANS nTMM is at UT mechanical shop. 1'
2. Updates on nTMM magnets work (Yuri) 10'
3. Updates on January 2024 data analysis (Yuri) 10'
4. Updates on U. Kentucky developments for nTMM (Mubi) 10'
5. AOB

## Updates on nTMM magnets work (March 10, 2025)

1. Shaun and Evan - UKY function generator and UKY amplifiers are prepared for degaussing study (16 Hz, 100 sec, starting max 2 A). Offset of PS should be 0V
2. New amplifier (200 v , 1A) purchased for degaussing along magnet axis through the main coils. Can be used with UKY function generator. Offset of PS should be 0V
3. Alina – checking wiring of degaussing connections – DONE
4. Connor – checking 8-layers in main coil connections – DONE
5. Alina – measured RMS of axial magnetic field fluctuations with TDK-Delta PS is  $0.28 \mu T = 2.8 \text{ mG}$   
FWHM of resonance at 25 Gauss is  $\sim 150 \text{ mG}$ . One-hour scan is possible with step size 30 mG for 67 hours from 24 to 26 Gauss
6. Evan – measures RMS of TDK-Delta PS with oscilloscope at current 0.32 A. – in progress  
measures linearity of TDK-Delta PS connected to the magnet (need 5-digits voltmeter) – in progress
7. Alina, Connor, Evan – demagnetization study starting this week

# Updates on January 2024 data analysis (March 10, 2025)

1. Nathan – detector ROI analysis for all magnetic fields combined gives the probability  $(0.11 \pm 2.56) \times 10^{-13}$  per neutron (preliminary), i.e.  $\lesssim 5 \times 10^{-13}$  at 95% CL – in progress
2. Carolyn - independently checking Nathan's results – in progress
3. Monitor Intensity corrections still due (Dead Time, McStas – James, Windows – Mubi) – in progress
4. James – saturation in GPM (after Vlad Sedov) is not an effect – needs final conclusion
5. James – Data analysis of 2021 (with detector activation) – in progress
6. James - Intensity in 2021, DT correction, comparison with 2024, and with gold foil activation – in progress
7. Cary – calculating  $\Delta m - \theta_0$  maps for GP-SANS configuration/spectrum - in progress at GT-cluster

## Other Projects in Evolution

1. Mubi – magnetic field simulation with mu-metal by KOMSOL
2. Mubi – smaller prototype of magnet at UKY to understand effect of mu-metal and Earth field
3. Leah-Shaun-Measure magnetic field inside the GP-SANS guide (with phone?) when guide will be open
4. James - Write express-analysis program for nTMM incl. run #, run duration, GPM, ROI counts for 3 days in May.