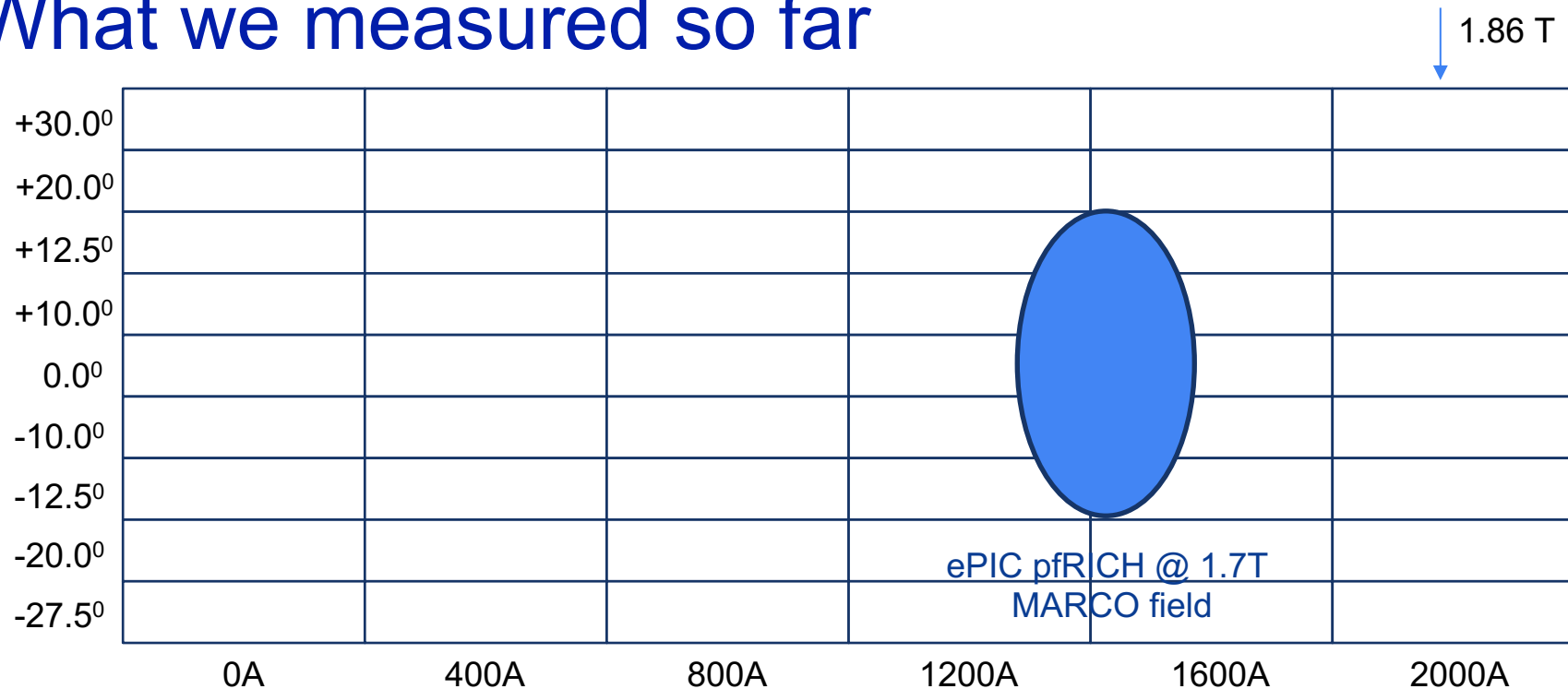


What we measured so far



➤ This is a Nov'24 scan in the “main” (X) tilt axis orientation

- 100k events per point with unfortunately a variable (typically ~3-7%) useful event fraction
- A similar scan in Y-orientation (Nov'25) exists, though in a $[-35^\circ \dots +17.5^\circ]$ angular range
- Several HV settings per [angle,field] point; gains from $\sim 2 \times 10^6$ to few times 10^7 ; PC voltage 50/100/200/400V

What we measured so far

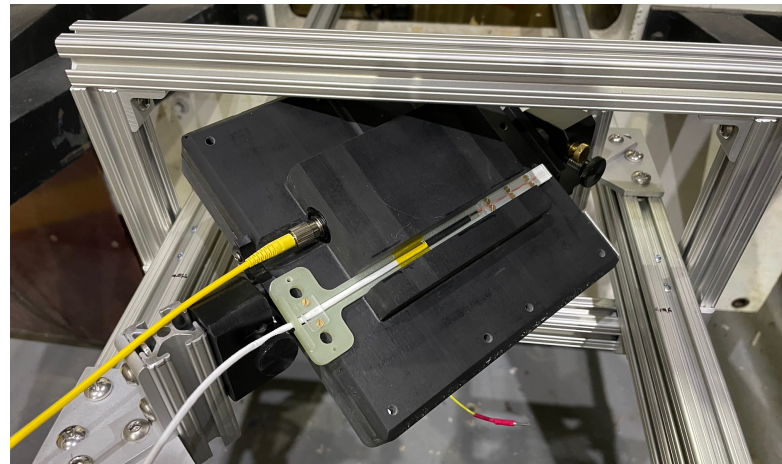
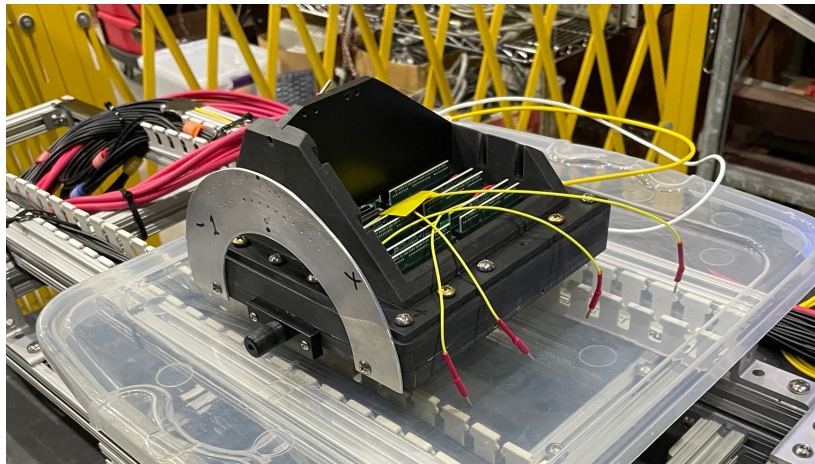
- A similar low stat scan in X-orientation at a fixed 200-675-200-675-200 voltage
- Will perform a similar scan in a “flipped field sign” configuration tomorrow (see next slides)
- Have some data on afterpulsing and DCR
- Some data on asymmetric biasing
 - May want to increase a statistical sample for these studies (a program for Friday)
- Have a PiLas rate dependency of gain measurements (to confirm there is only little saturation)
- Cannot increase either angular range or increase max field
 - However, can perhaps extend an HV (gain) range, granularity at some settings (like around $\pm 13^\circ$) and statistics
- Defer quality timing measurements till January / February
 - In PiLas / DRS4 data, see only weak dependencies in a range of around 50 .. 60 ps on a good day
 - Scope measurements in a B-field with PiLas exist; yet no conclusive outcome yet

Plans for Thursday and Friday this week

- Day shifts only (8.00am sharp - 4:30pm)
 - Dipole will be warmed up starting from ~7am; PiLas laser will be left permanently turned on
- Thursday: a partial scan in an upside-down configuration, X axis (imitate B-field sign flip)
 - Need to come up with a realistic one-shift plan
 - Caveat: an All Hands meeting at SMD from 10:15am till 12pm
- In the evening, switch back to the “normal” configuration, X axis
- Friday: remaining “regular” and calibration measurements
 - Re-take +/-12.5 degree tilts (data was collected with a too high fraction of single photon events)
 - Extend the parameter space? Move the laser spot around a ~3x3 pad area? Change spot size? ...?
 - At the very end: calibrate Hall probe orientation with respect to the pole plane and rail direction
- We will not be bringing a femtosecond laser to SMD this time



Plans for tonight



- AK: finalize hardware modifications to start data taking at 8am tomorrow
 - So far, this upside-down configuration looks good
- Ping, Andrew, Jihee, Yifan: provide a list of data points which look suspicious in the data collected so far
- Also, we need to estimate what portion of our “usual” scans fit into ~6-7h

