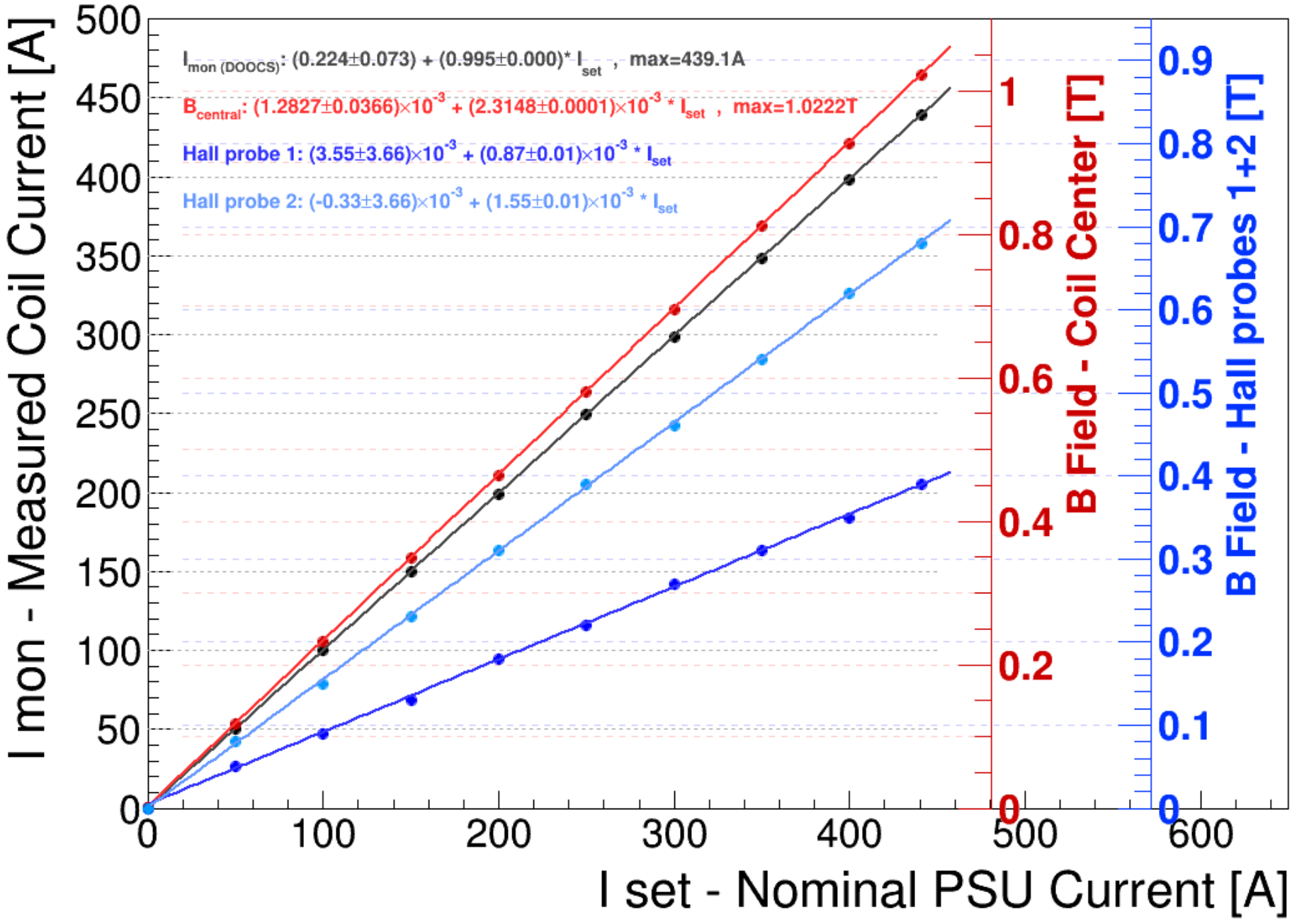
PCMAG Calibration: B vs. I



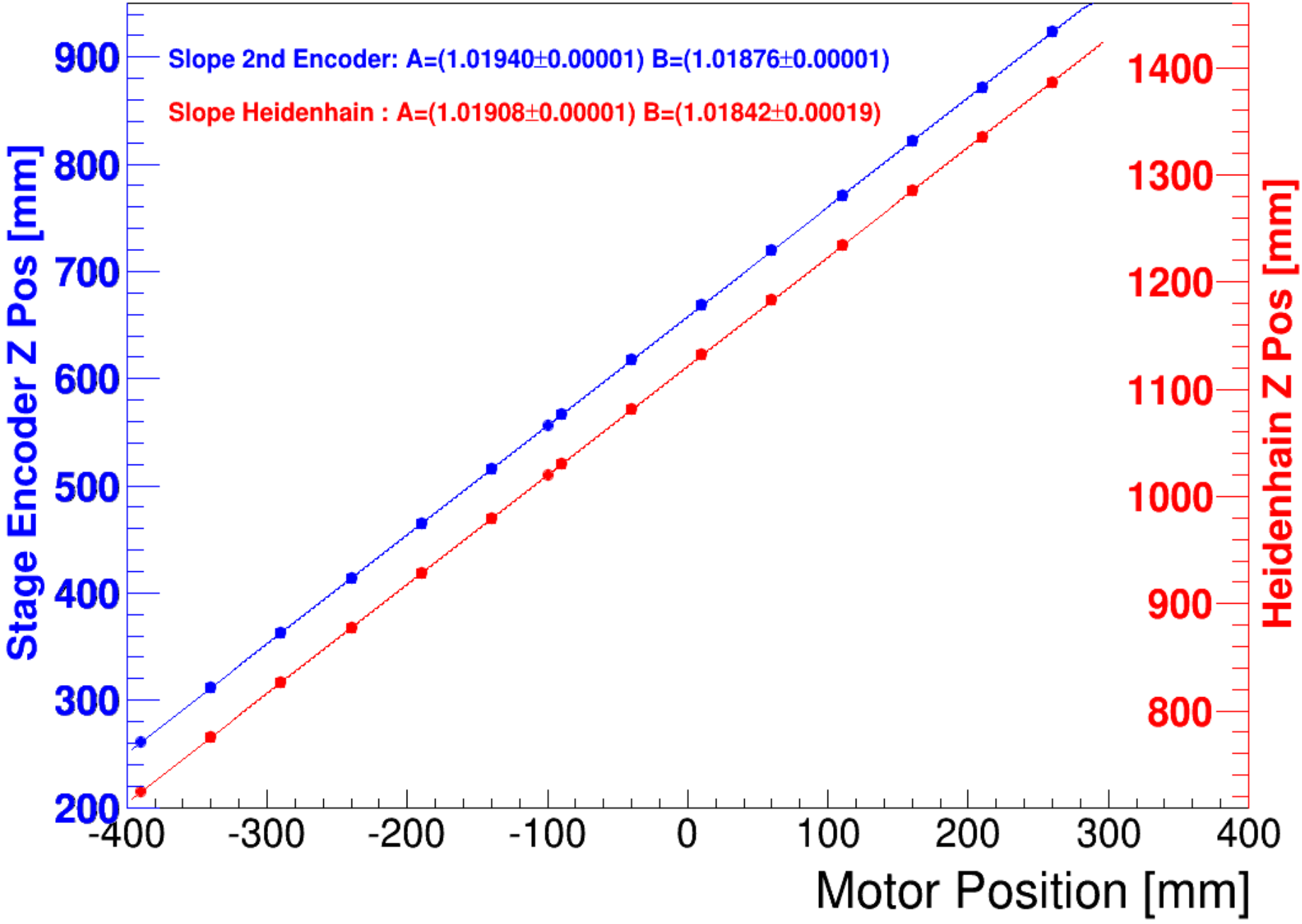
PCMAG Calibration: Additional Information

- Measurement:
  - Ramp up to 1T (441A), down in 50A steps
  - Up again in 100A steps (last to 441A)
- Value at PSU current settings from manual for 1T: 1.022 T
- Position of central Hall probe: ± 5mm
- Estimated measurement errors:
  - I coil ± 0.1 A
  - B center ± 0.0002 T
  - Hallprobes ± 0.005

- B Field Stability vs Table Movement (rough, only a few points checked):
  - Horizontal: ≤ ±0.0002 T (min-max = 1.02212 - 1.02236 T)
  - Rotation: ≤ ±0.0002 T (min-max = 1.02212 - 1.02242 T)

- Idea: include “PSU current calculator” with input being the desired B-field in DOOCS PCMAG panel

Stage Calibration: Z / Horizontal Axis



Stage Calibration: Additional Information

- Only one measurement run (more statistics needed?):
  - Moving in one direction and back → 2 curves (lines) for each encoder
- Calibration offset about 2% → direct impact on drift velocity results

- Calibration for other axis (vertical, rotation) not measured yet

- Position precision (reproducibility):
  - Analysis not ready yet
    (also some more measurement runs for vertical/rotation to be done)
  - Precision so far seems to be better than expected, i.e. < 0.2mm
    (influence of movement in one axis on other axis larger →
    will be presented in a future meeting)
  - Results will be presented in a future WP meeting

- "Ghost" movement under B-field: forces are being checked
  to develop a braking system