



subSMCC2a: ongoing magnetic measurements and analysis being carried out at PSI

PSI/CERN LTS WP Progress Meeting

D. Araujo, B. Auchmann, A. Brem, N. Keht, C. Lindner, T. Michlmayr, C. Müller, I. S. P. Peixoto, A. Stampfli and J. Van den Eijnden.

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November 2025

Agenda

subSMCC2a test campaign

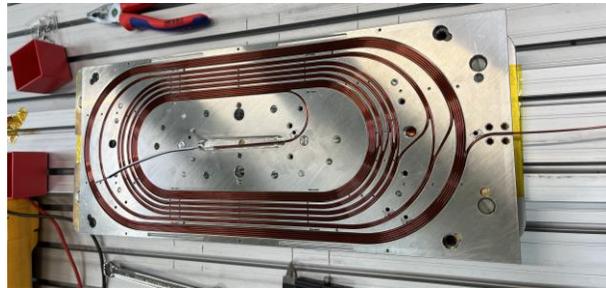
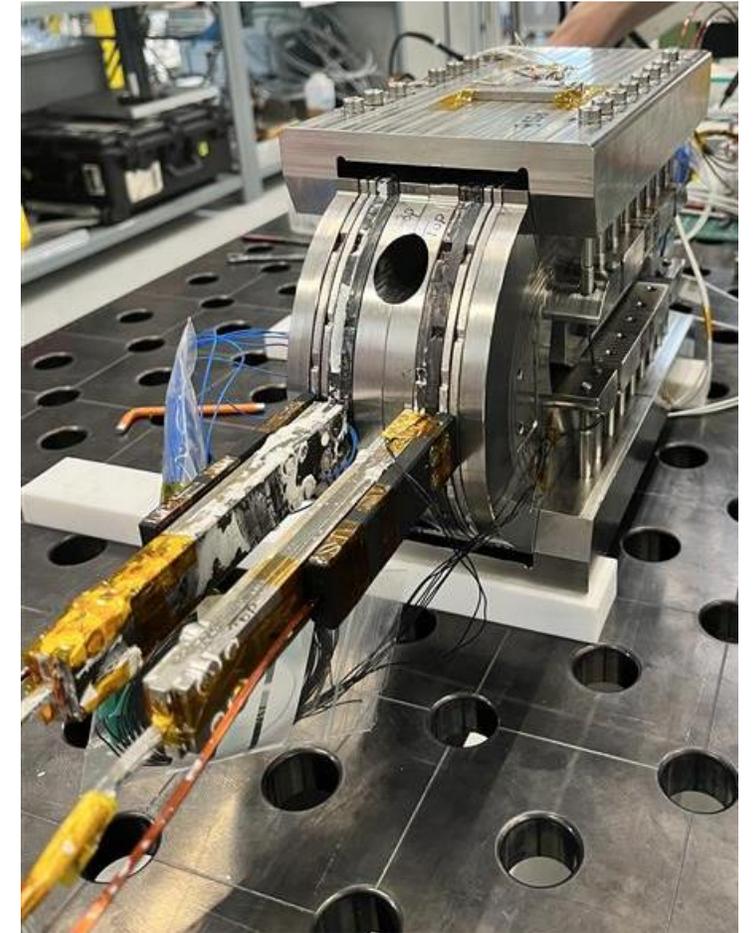
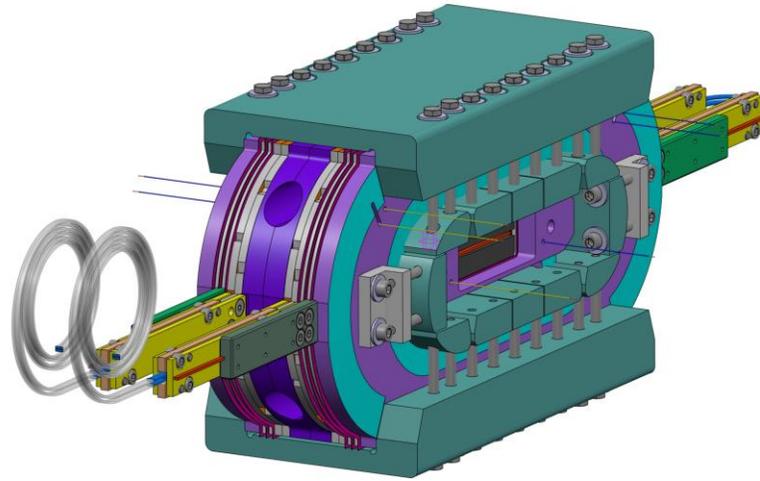
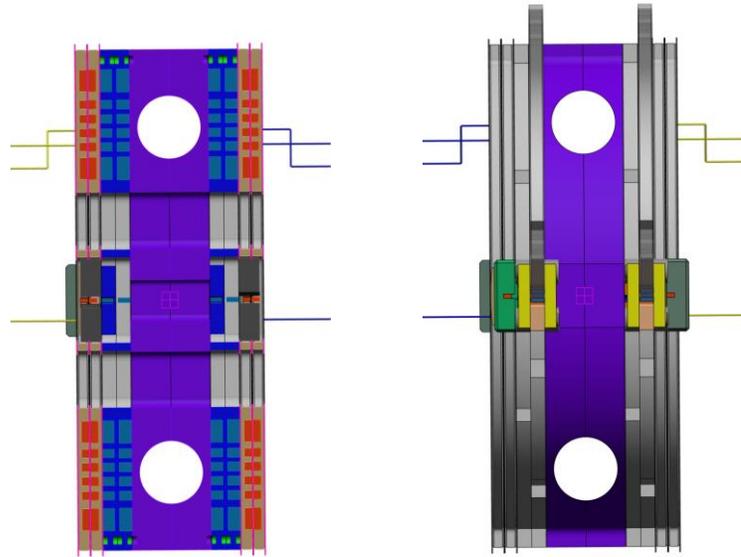
subSMCC2a cold magnetic measurements

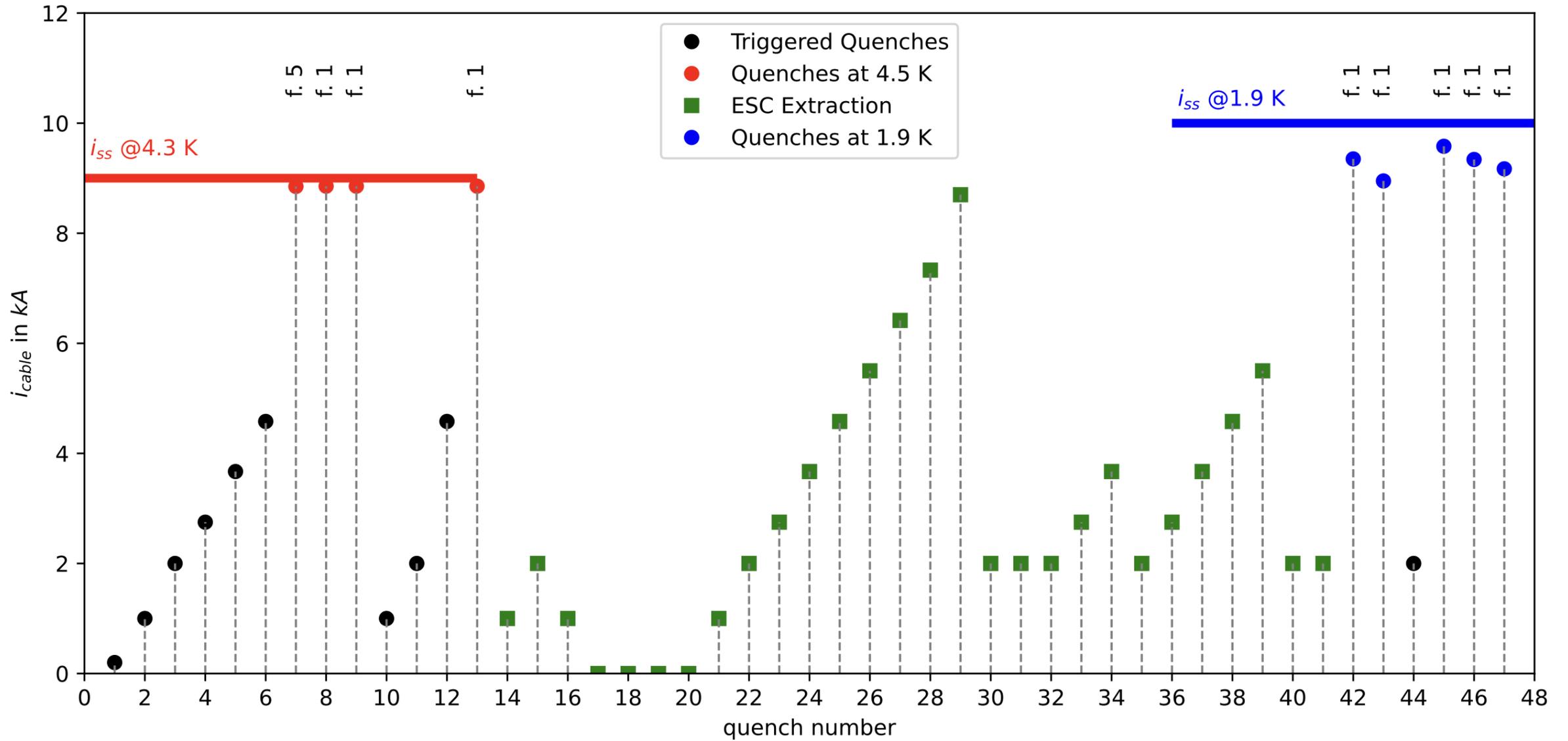
subSMCC2a magnetic measurements at PSI

subSMCC2 test campaign



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The test was conducted at CERN, with data provided by V. di Capua and colleagues.

Coils 1 and 2 showed a perfect memory over the thermal cycle and re-assembly.

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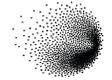
subSMCC2a cold magnetic measurements

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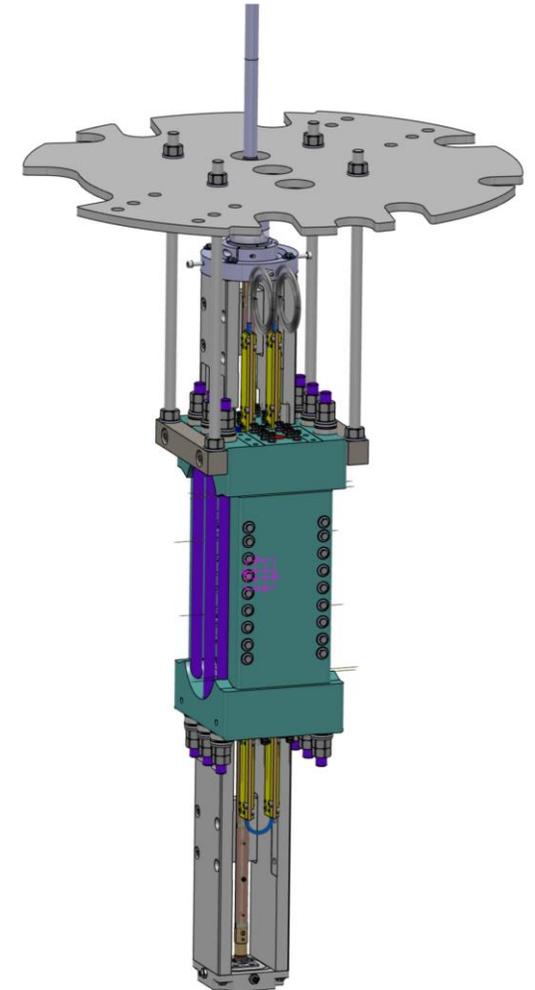
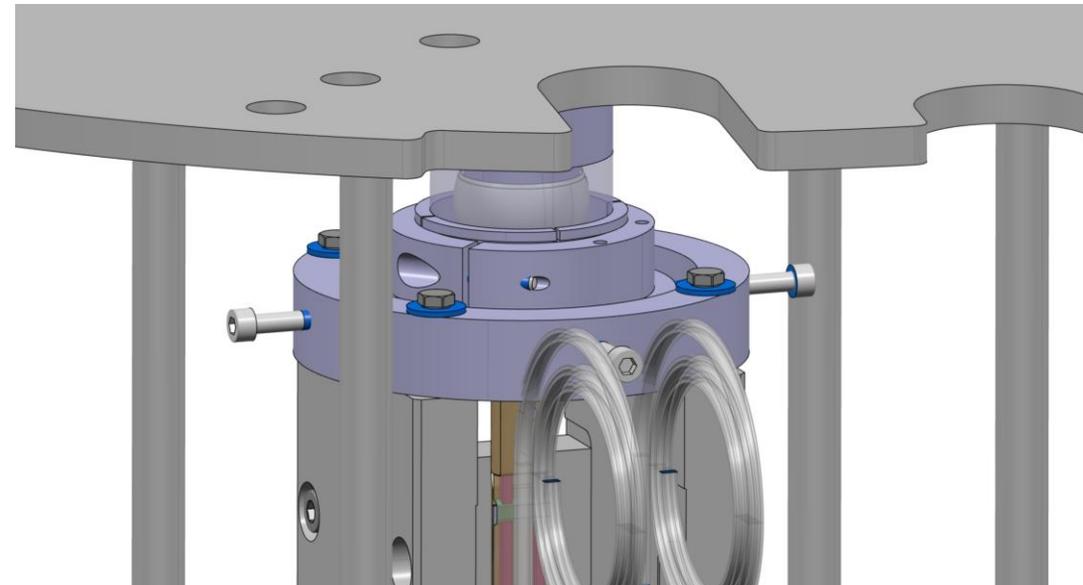
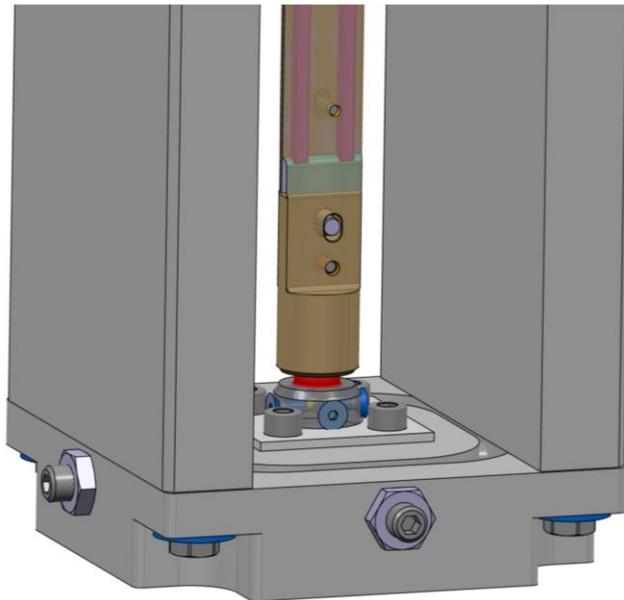


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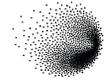
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Magnetic measurement performed at CERN with 5 segments magnetic shaft



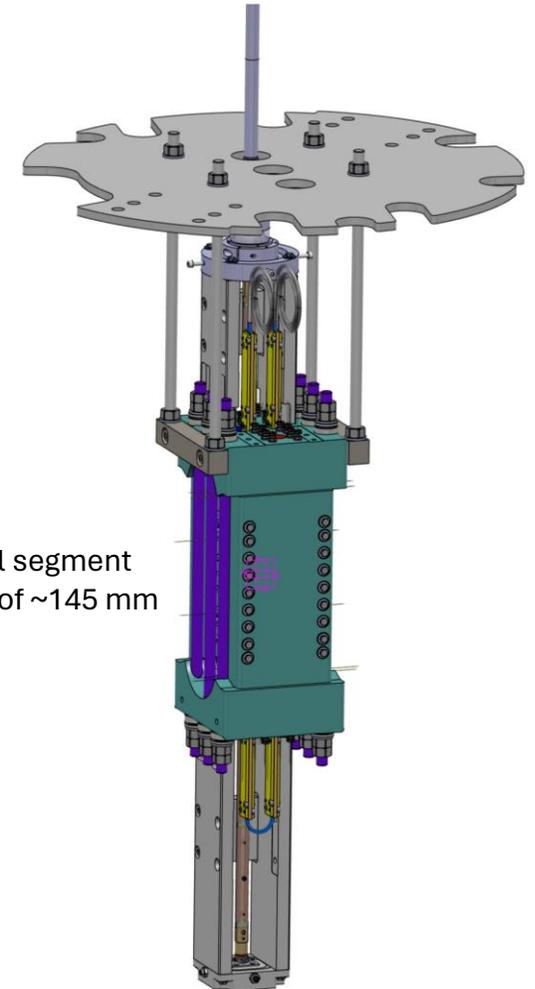
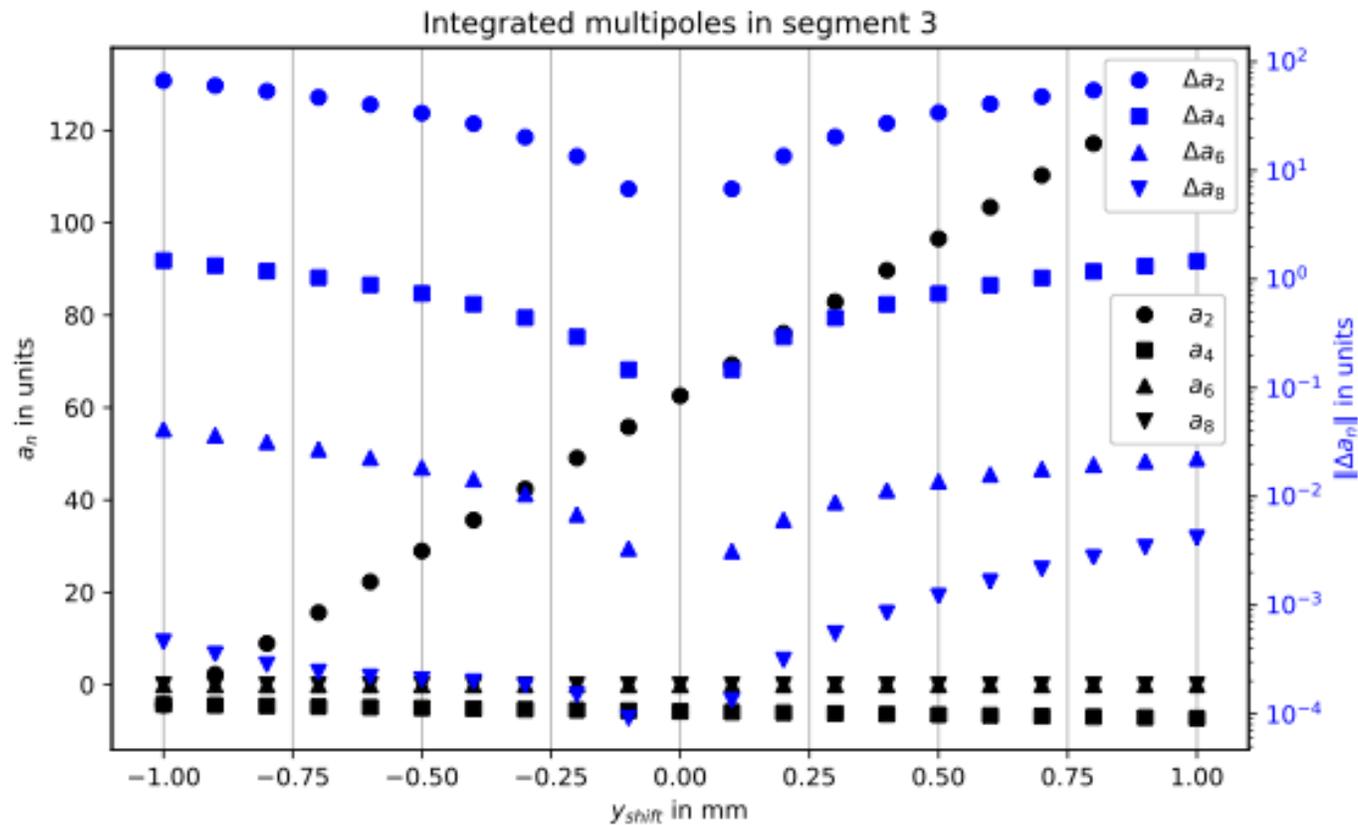
subSMCC clear bore is 22 mm
Magnetic shaft diameter is 18 mm

subSMCC2a cold magnetic measurements



Parametric analysis with central segment +/- ~70 units / mm

The nominal value is on the order of 60 units, while the measured one is greater than 100 units.



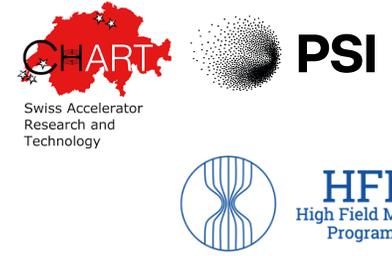
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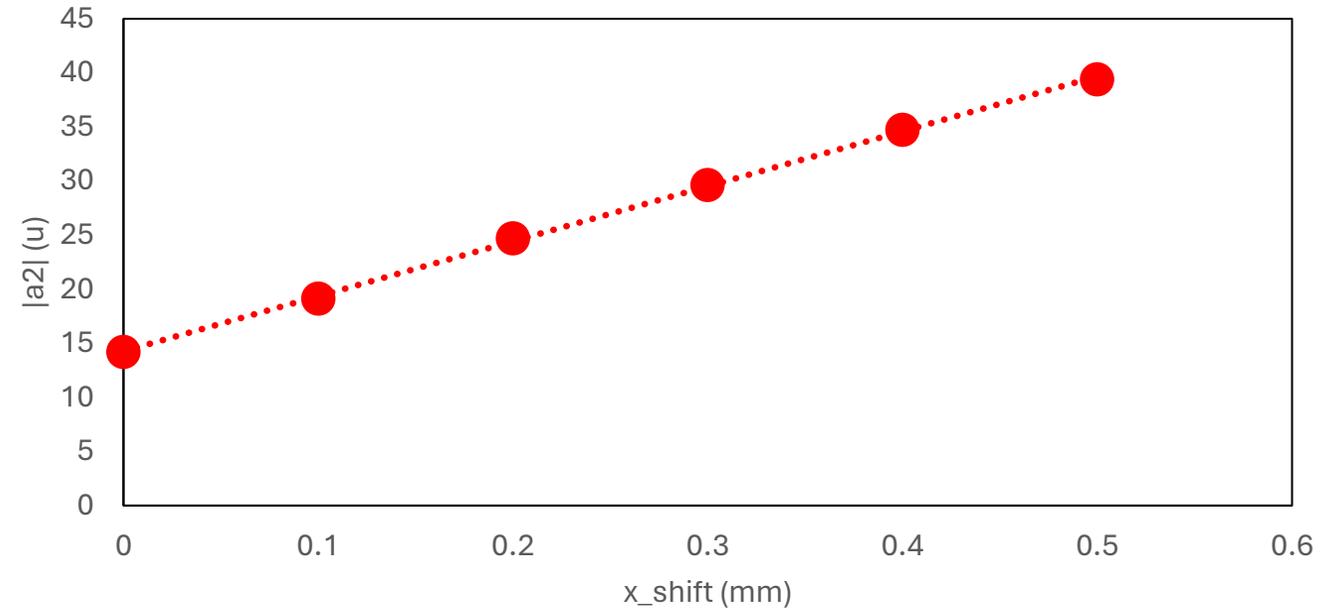
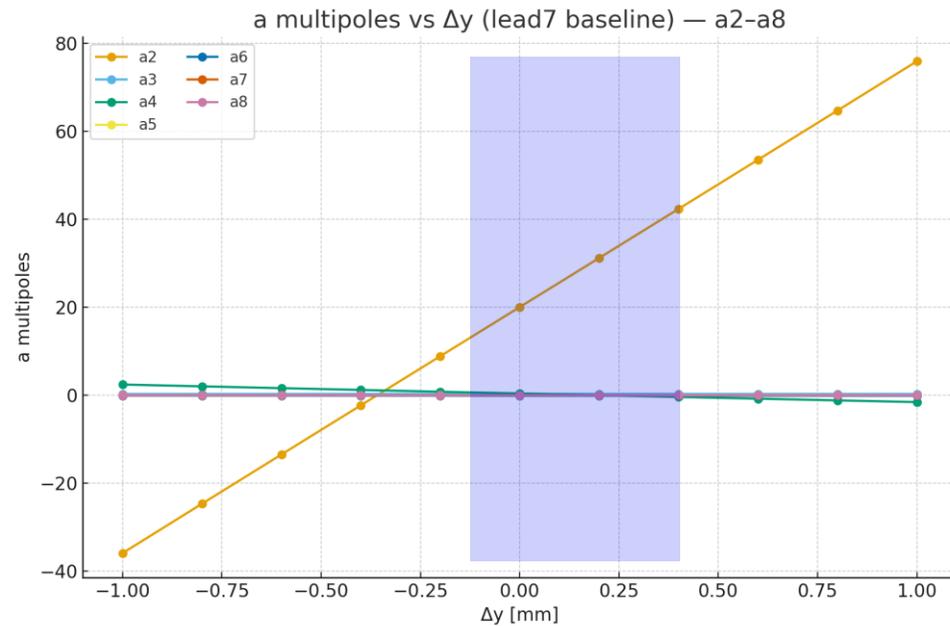
subSMCC2a magnetic measurements at PSI

subSMCC2a cold magnetic measurements at PSI



Parametric analysis with central segment +/- 55 units / mm
 The measured value (analysis in progress) show 50.4 units / mm

Good agreement for a2 between simulated and measured



subSMCC clear bore is 22 mm
 Magnetic shaft diameter is 18 mm

PSI: segment length of 500 mm, coil diameter of 21.5 mm considering the curved shape

Measurements performed by G. Montenero (PSI)