



Geometrical Measurements

HCQQXF_SC002-FL000001 / LMQXFA01

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MAB meeting 20/01/2025

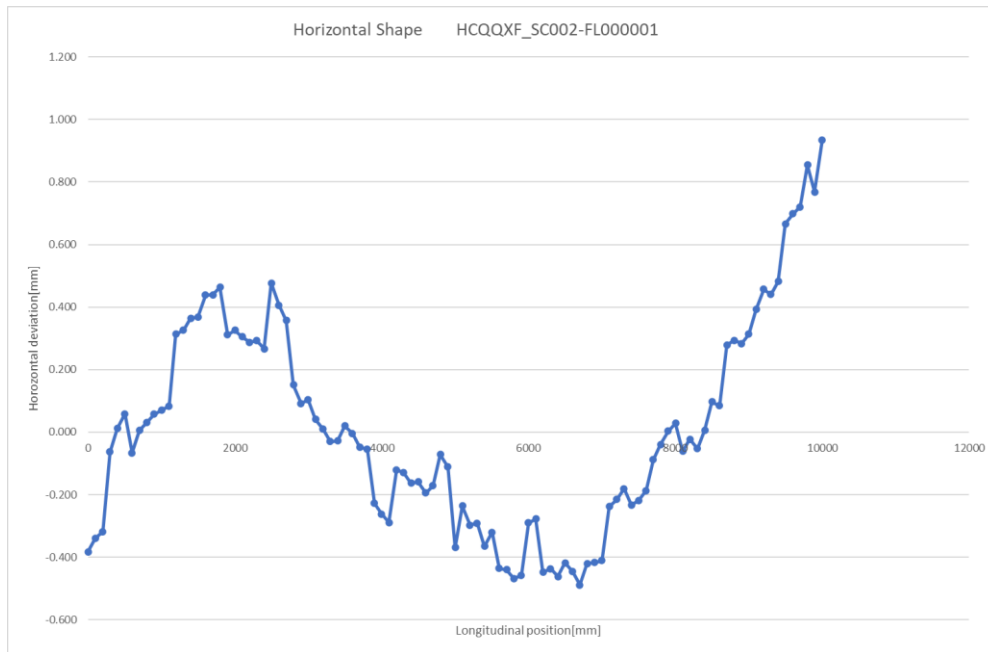
Q3 HCQQXF_SC002-FL000001 / LMQXFA01

- Measurements @ construction
 - Coldmass form & shape
 - Available data from FNL
- Fiducialisation
- Magnetic vs. mechanical axis
- Conclusion

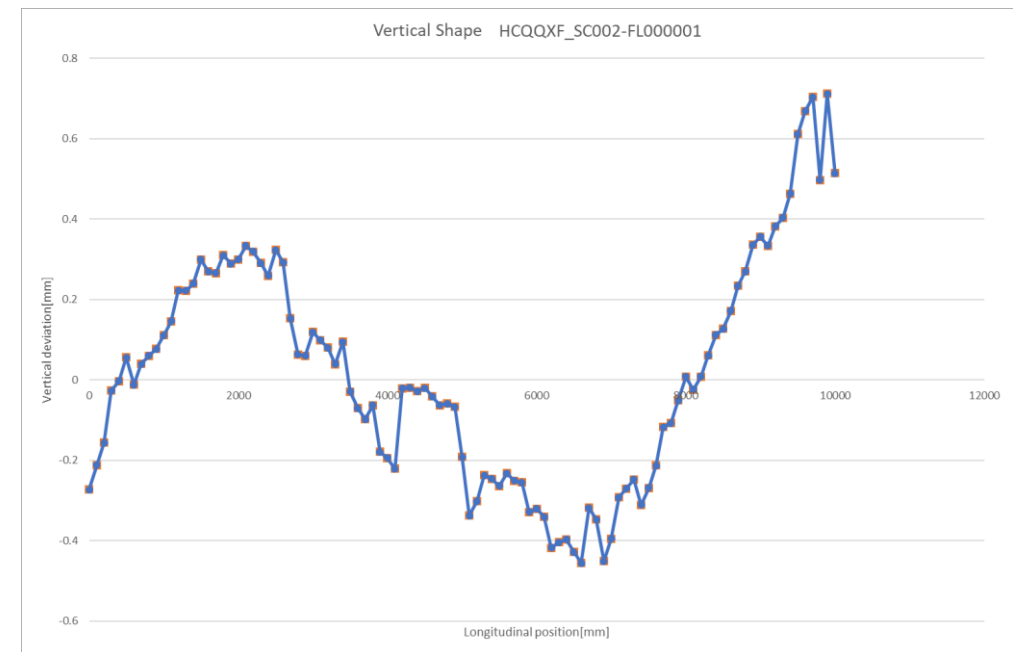
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Measurements @ FermiLab

Horizontal Shape



Vertical Shape

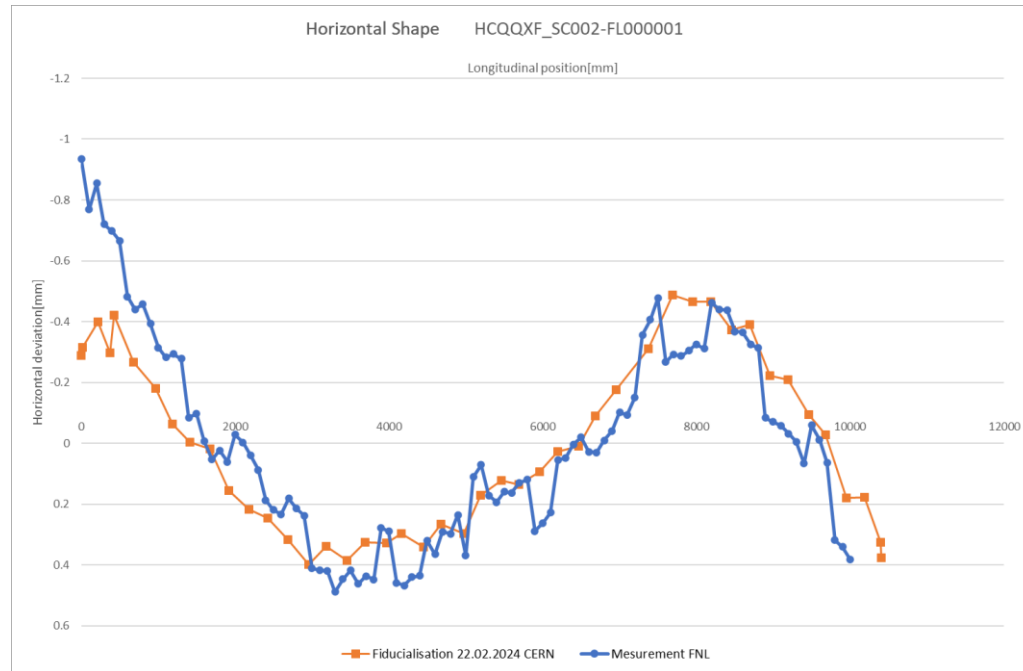


First geometry report from FNL with non coherent conventions

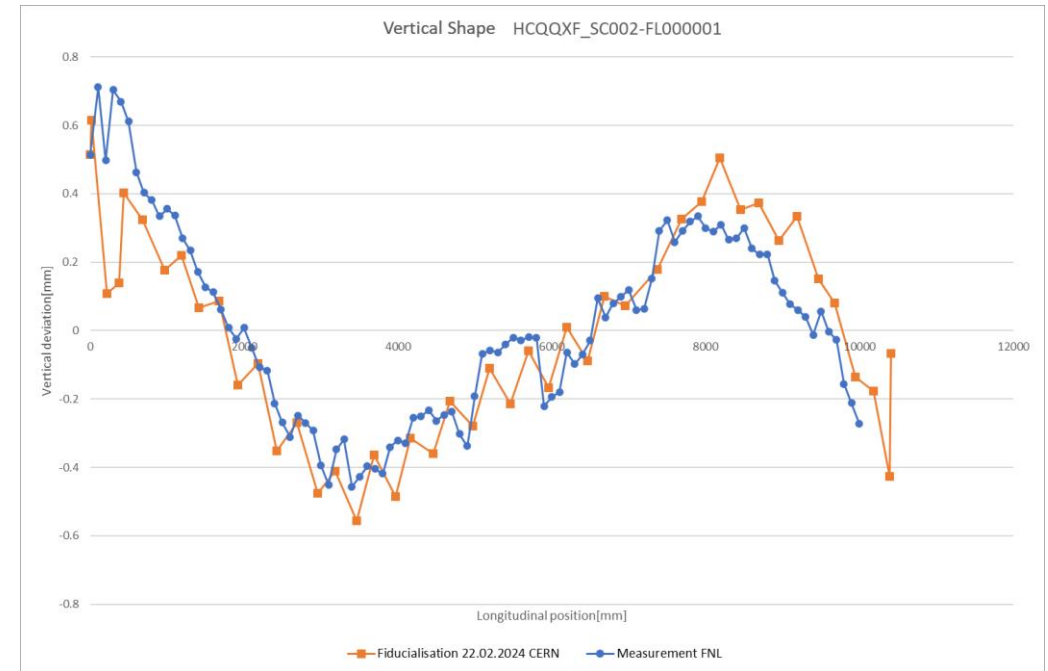
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Measurements @ FermiLab and CERN

Horizontal Shape



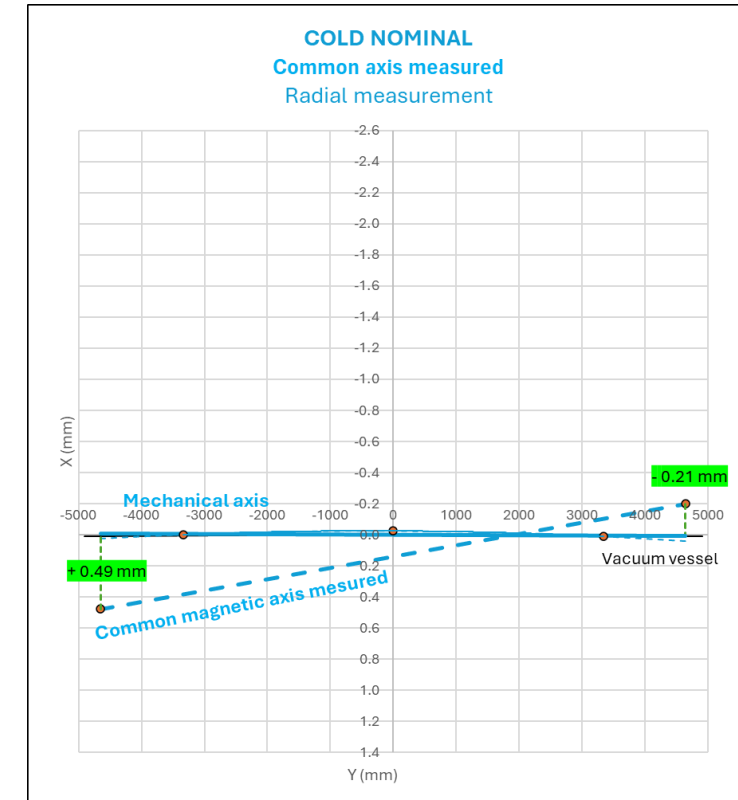
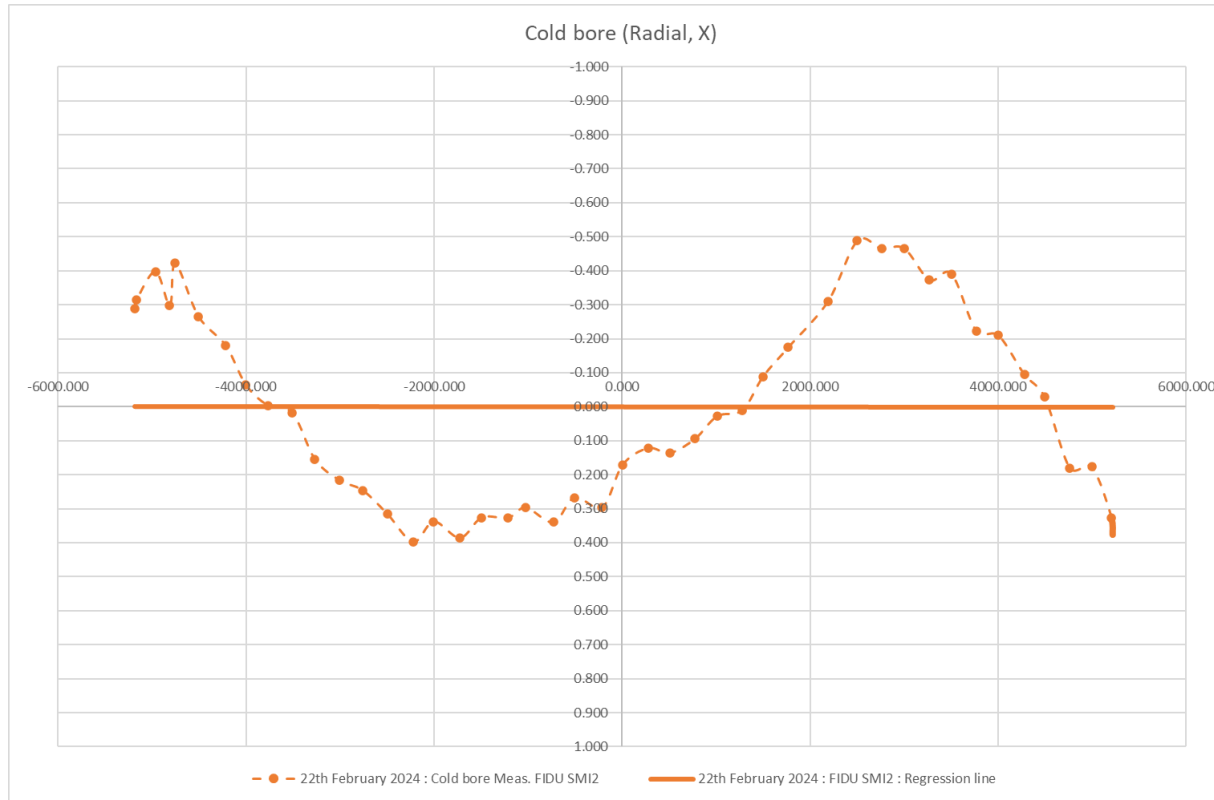
Vertical Shape



Seen from NIP-side to IP-side

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Radial shape mechanical Fidu CERN

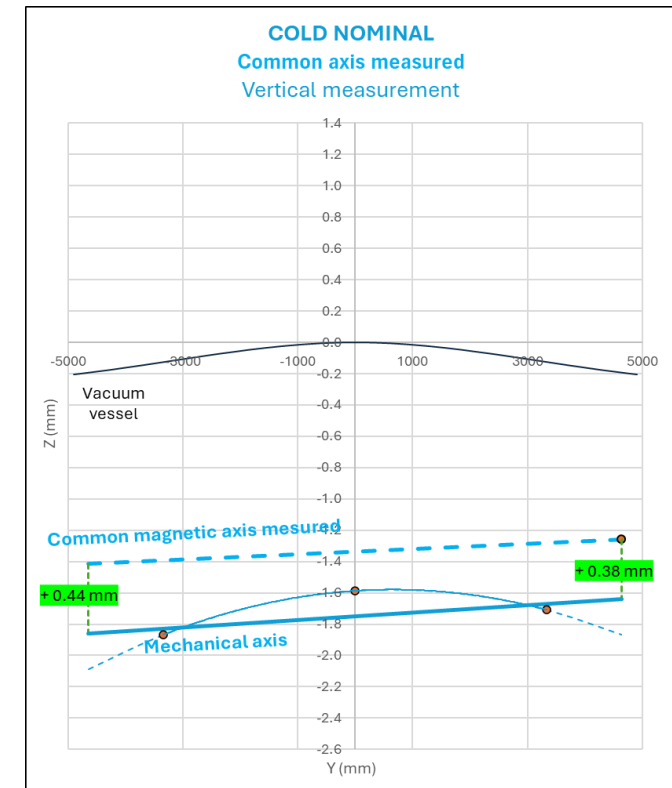
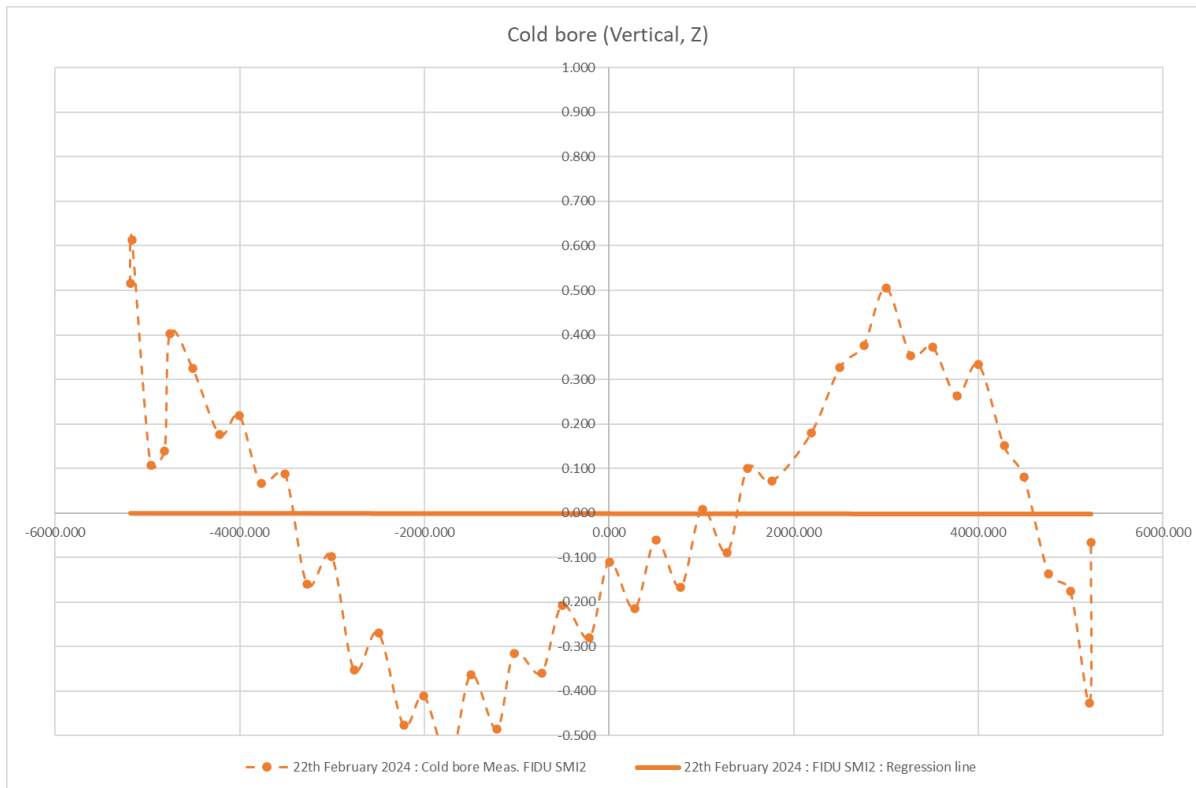


NIP side / Conn

IP side / Nconn

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Vertical shape mechanical Fidu CERN

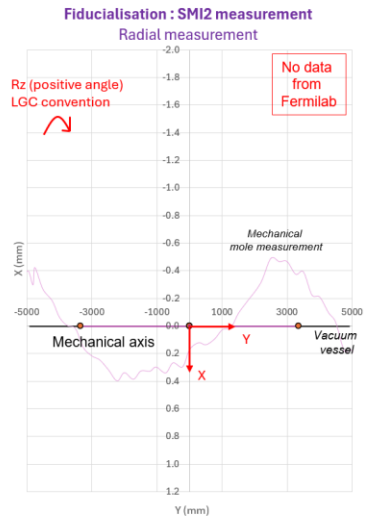


NIP side / Conn

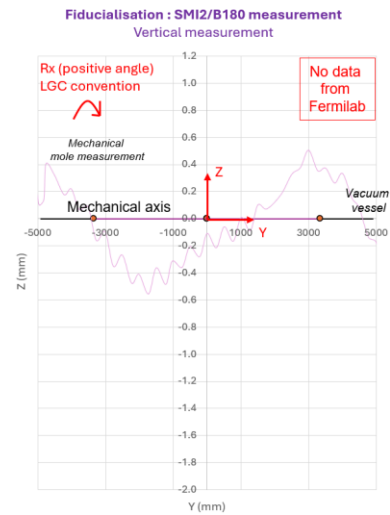
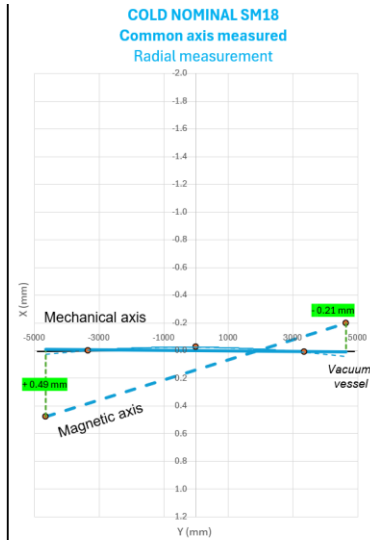
IP side / Nconn

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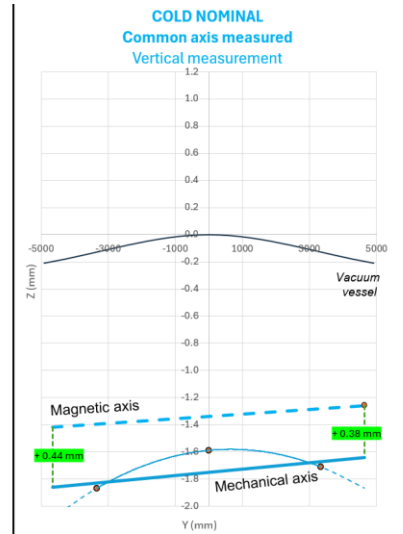
Relation mechanical/magnetic axis only at cold



Data not available



Data not available



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The Field direction is only available at cold

Fiducialisation : SMI2 measurement
Magnetic field

No data from Fermilab

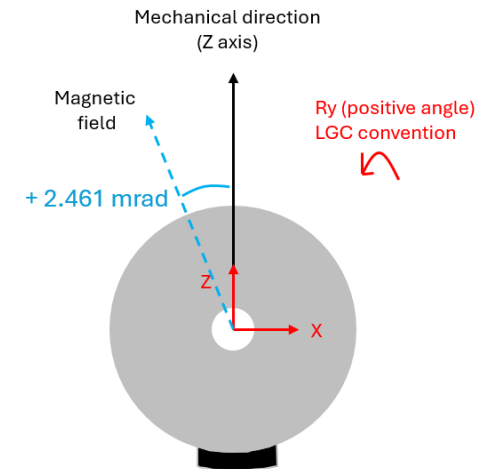
	LGC conv.
Delta Roll. (mrad) meca → magn	--

WARM Ambient pressure : SM18
Magnetic field

Data not available

	LGC conv.
Delta Roll. (mrad) meca → magn	--

COLD : SM18
Magnetic field



	LGC conv.
Delta Roll. (mrad) meca → magn	+ 2.461

General Feedback Q3 HCQQXF_SC002-FL000001

- **Data availability from FNL was an issue**
- **Some initial problems in the beginning, solved now**
- **Magnetic/mechanic offset only @ cold**
- Full details are in the test report: <https://edms.cern.ch/document/3192078/1>
- FSI showing coherent data
- Cartography of all extremities will be done end of Phase 2
- BPM-Beamscreen extremities only in Phase 3 (not for String)