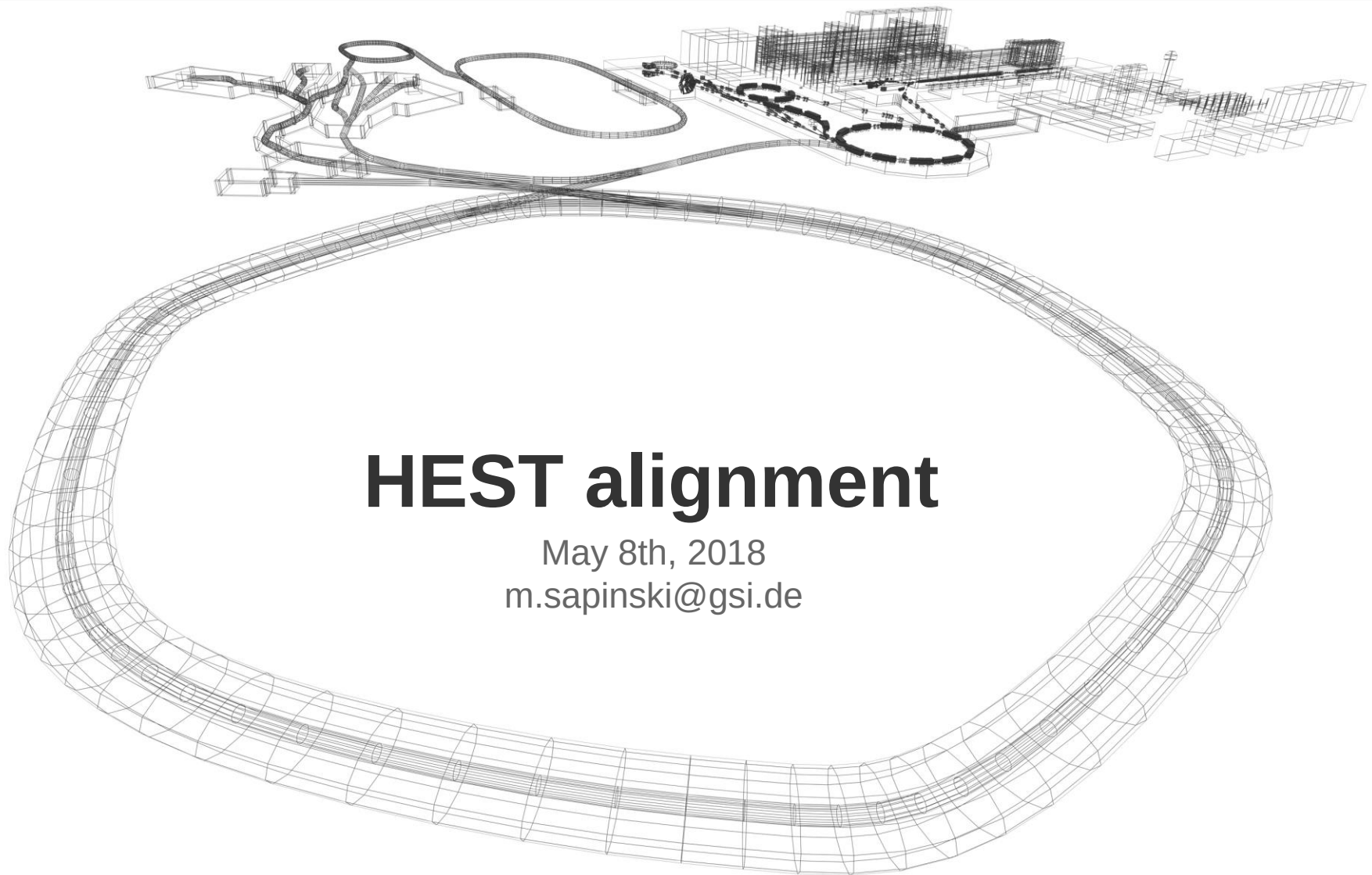
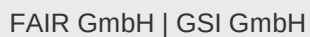




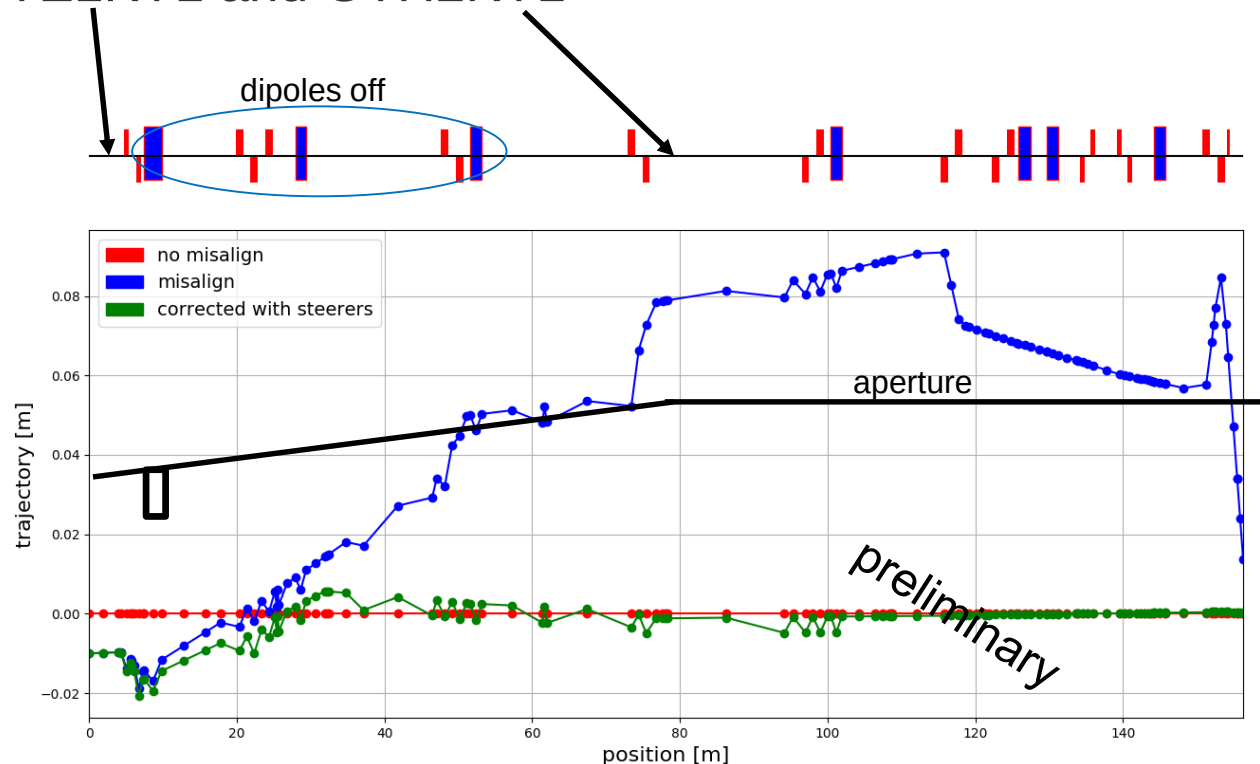
HEST alignment

May 8th, 2018
m.sapinski@gsi.de



TH line – MADX correction

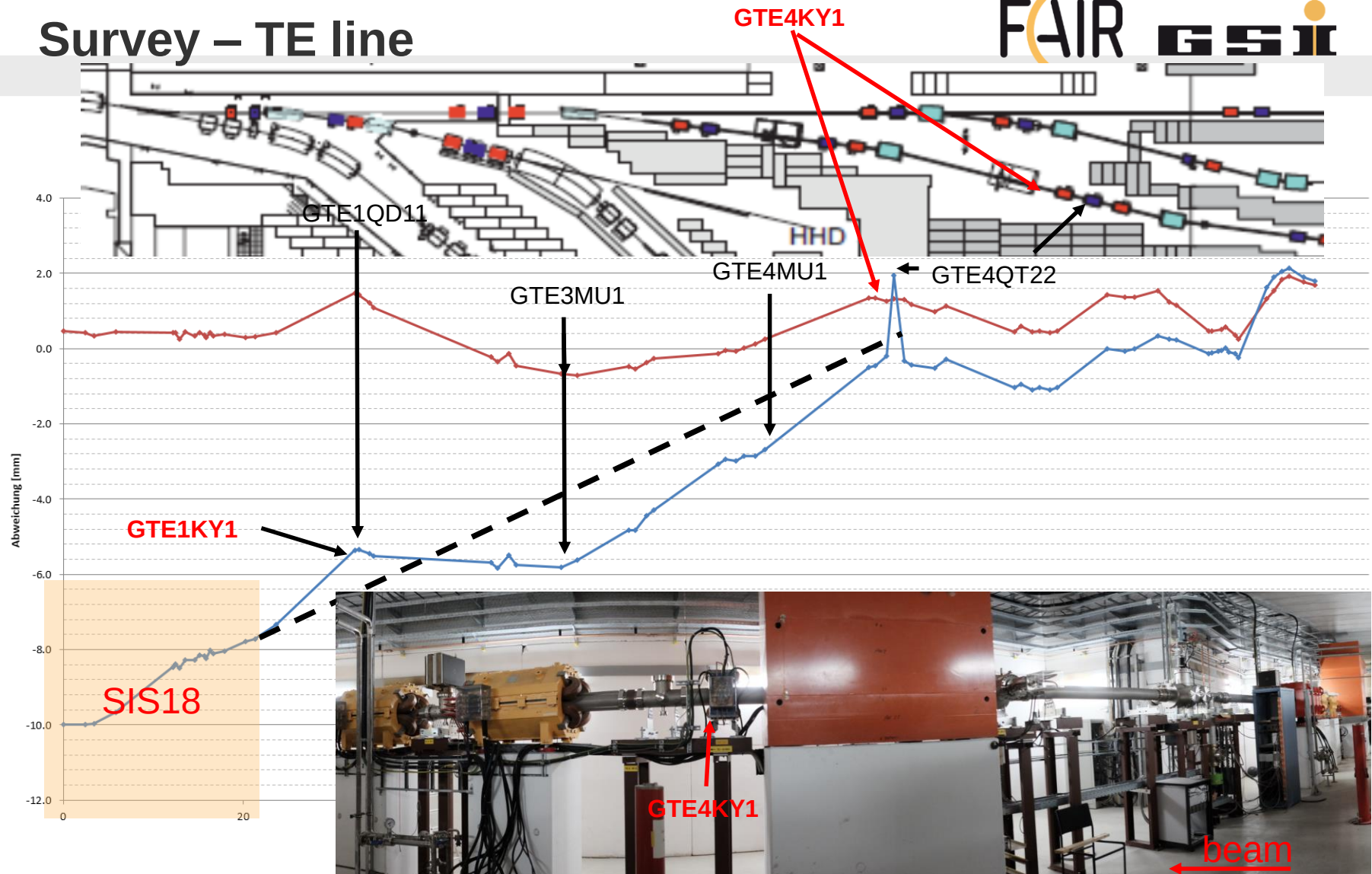
- based on HADES optics, using only two steerers:
GTE1KY1 and GTH2KY1



GTE1QD12: -11 mm

GTS1MU1: -10 mm, misalign = -8 mm, half-aperture = 35 mm,
expected 2 sigma beam envelope: 10 mm (MIRKO)

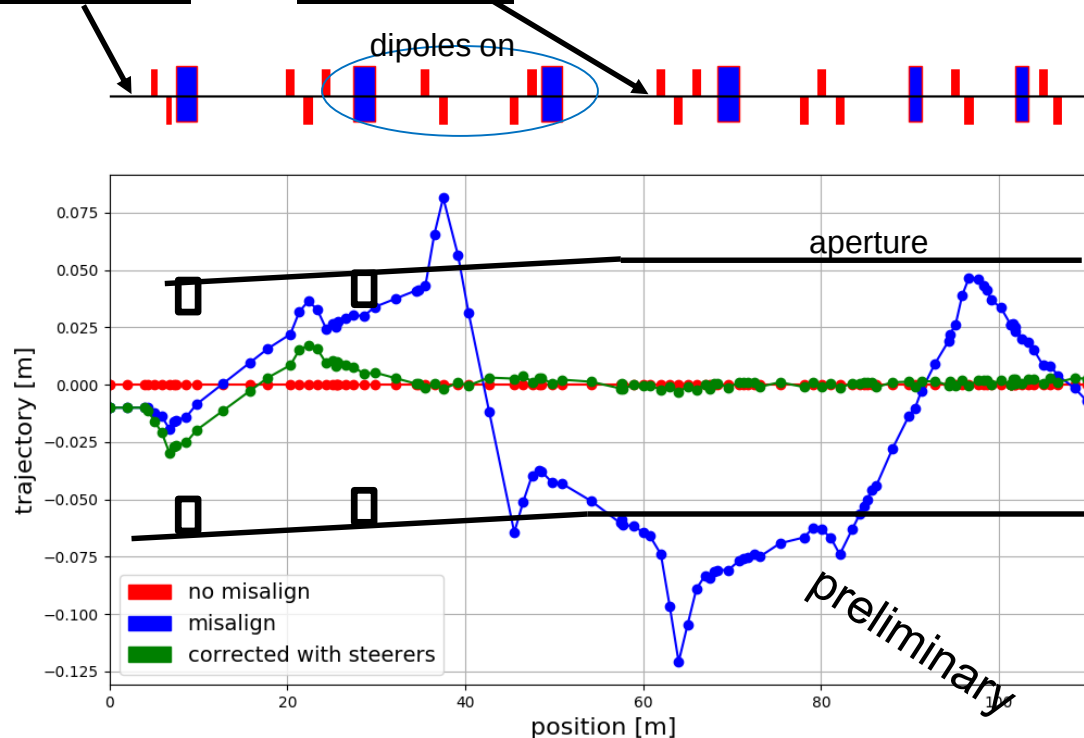
Survey – TE line



TE line – MADX correction

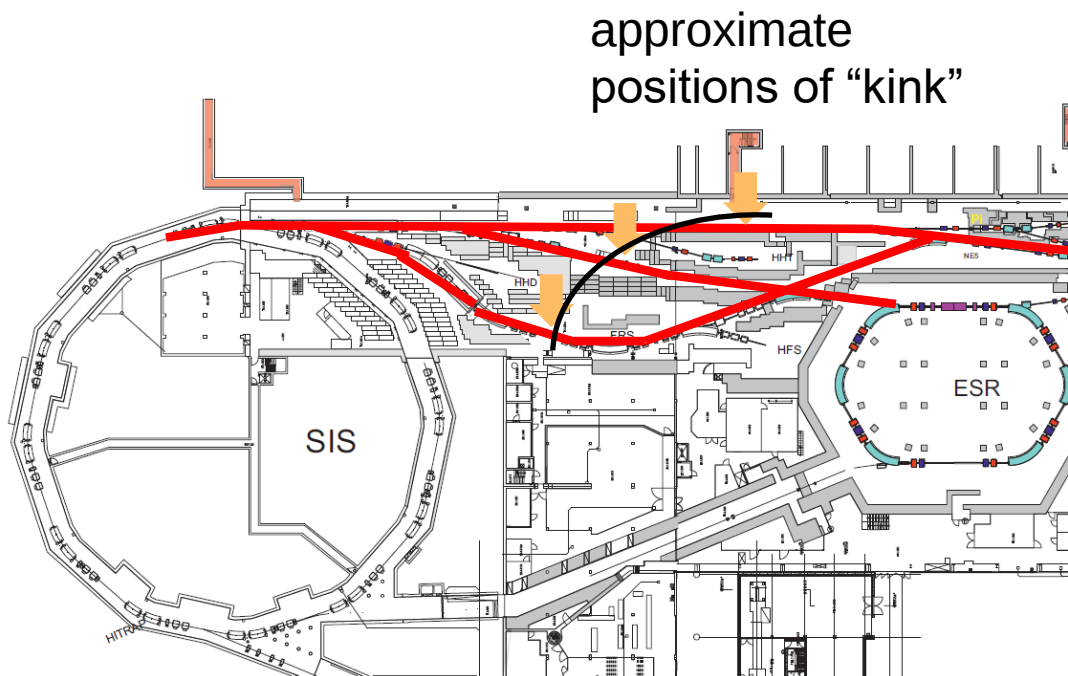
ESR injection optics, affected between steerers:

GTE1KY1 and GTE4KY1



MADX matching needs to adjust more magnets to achieve reasonable trajectory – to be investigated.

Floor cracking?



- Observation: floor maybe cracked – there seems to be more cracks in the “kink” zone

- We can deal with misalignment using existing steerers.
- Our *alignment reference lines* should be the straight extension of SIS18 new reference plane.
- Good alignment is especially important at the beginning of the line; suggested alignments:
 - GTE1QD11: -0.5 mm (vertically defocusing),
 - GTE3MU1 0.5 mm up (vertical aperture is small).
- In addition: GTE4QT22 shows “funny” 1 mm misalignment – verify and correct
- Include the correction in survey data, which afterwards are used to model the optics.

Extra slides



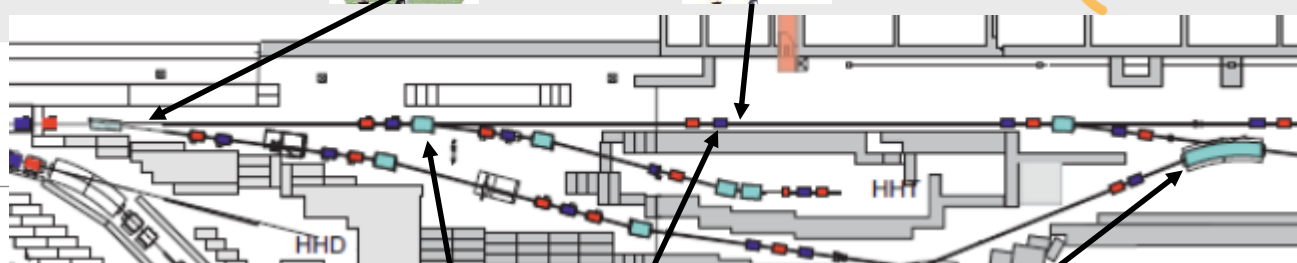
Survey – TH line



GTH1KY1



GTH2KY1

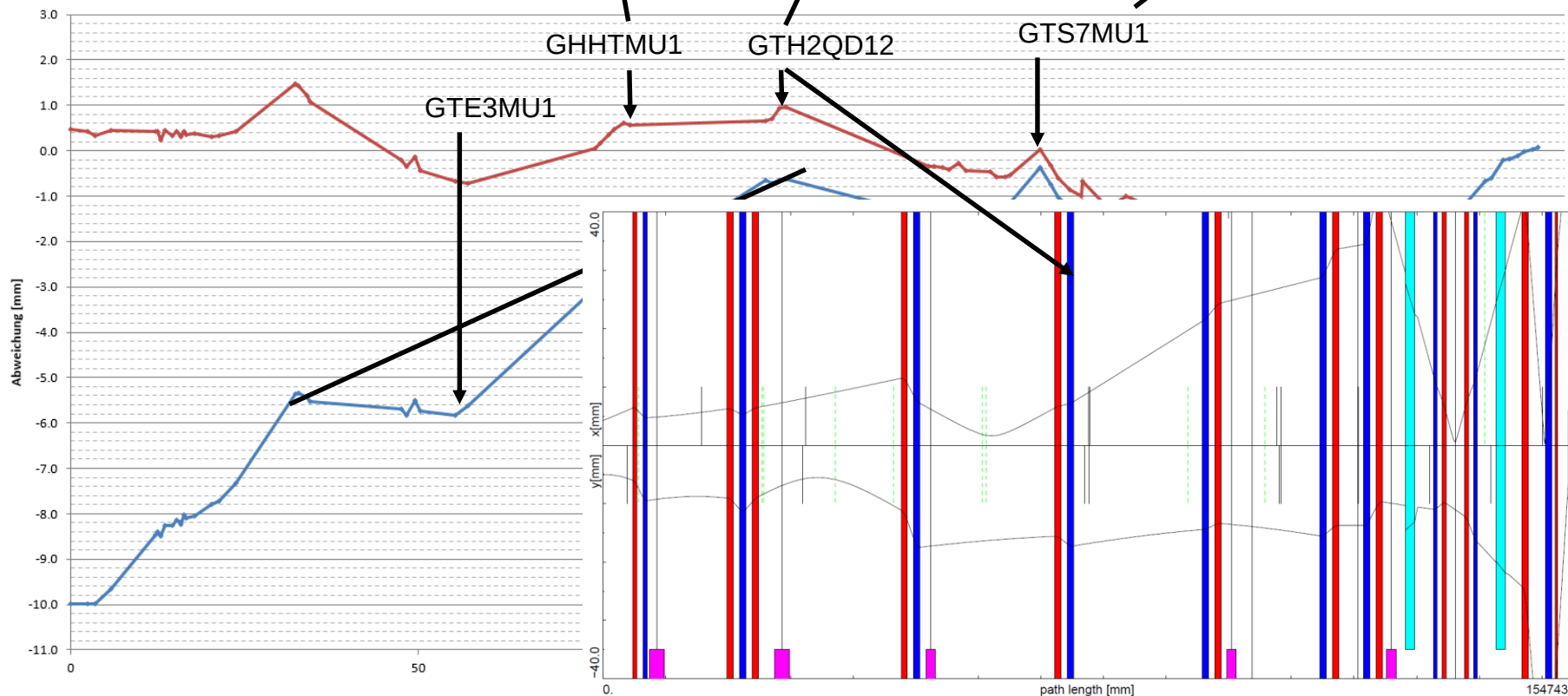


GHHTMU1

GTH2QD12

GTS7MU1

GTE3MU1

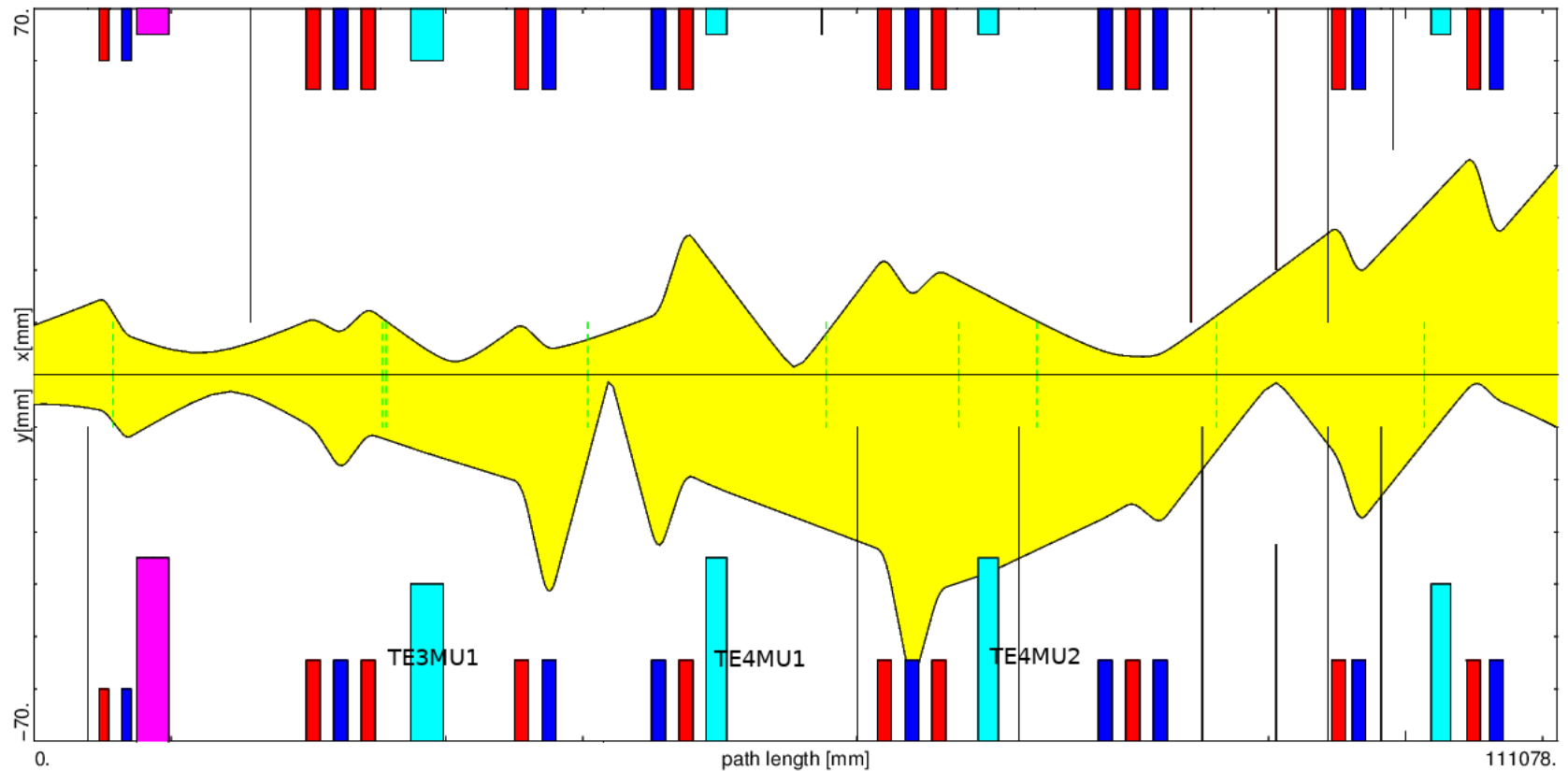


SH_: 18.08.2009 – SIS -> Hades via direkt

Mass= 12.0000 Charge= 6.0 Energy= 40.000 MeV/u Emittances= 1.000 4.000 pi mm*mrad

HADES optics 2018

TE line – beam envelope



SE_S: 19.11.2009 – SIS bis ESR via direkt durch den Stripper
Mass= 12.0000 Charge= 6.0 Energy= 40.000 MeV/u Emittances= 5.000 5.000 pi mm*mrad