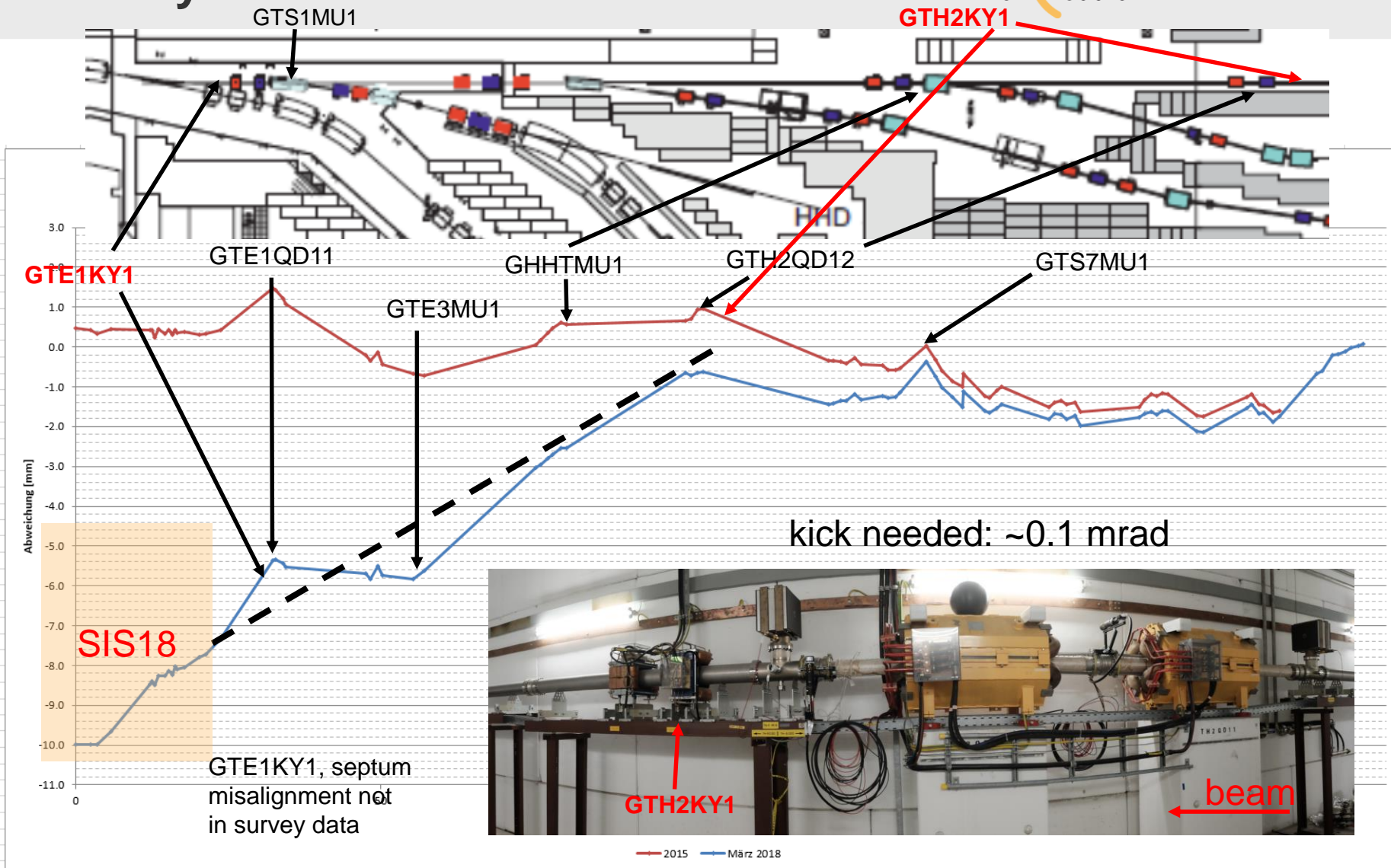


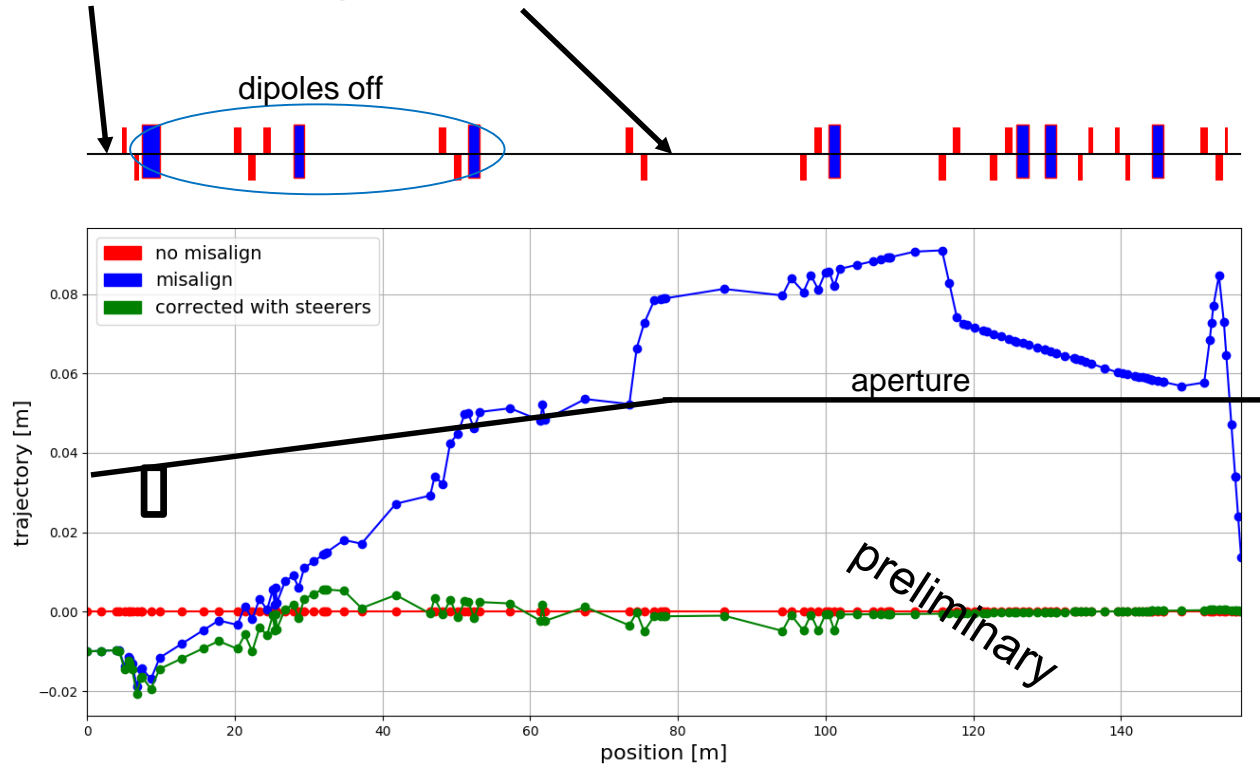
# HEST Alignment

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

# Survey – TH line



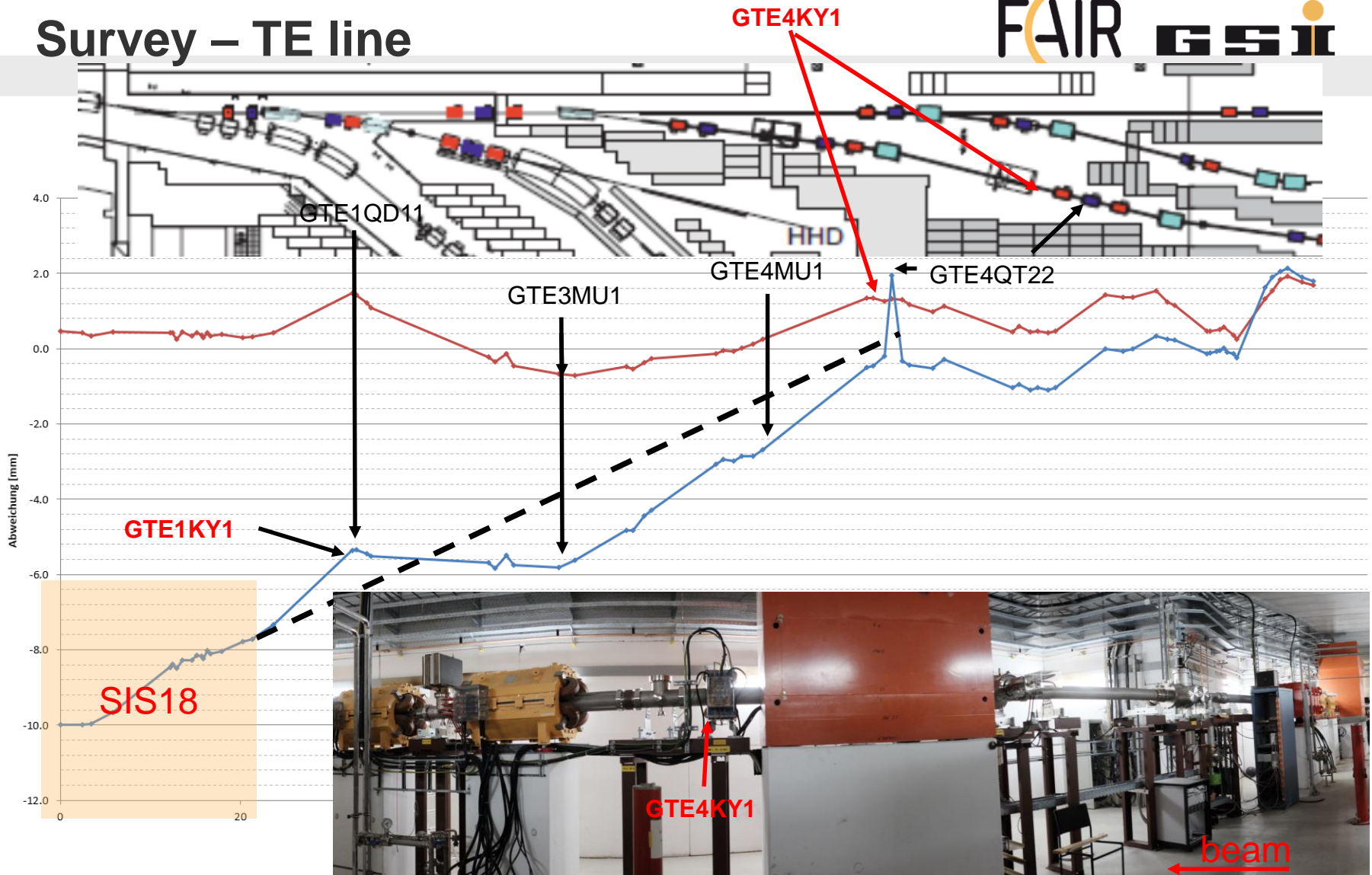
- based on HADES optics, using only two steerers:  
GTE1KY1 and GTH2KY1



GTE1QD12: -11 mm

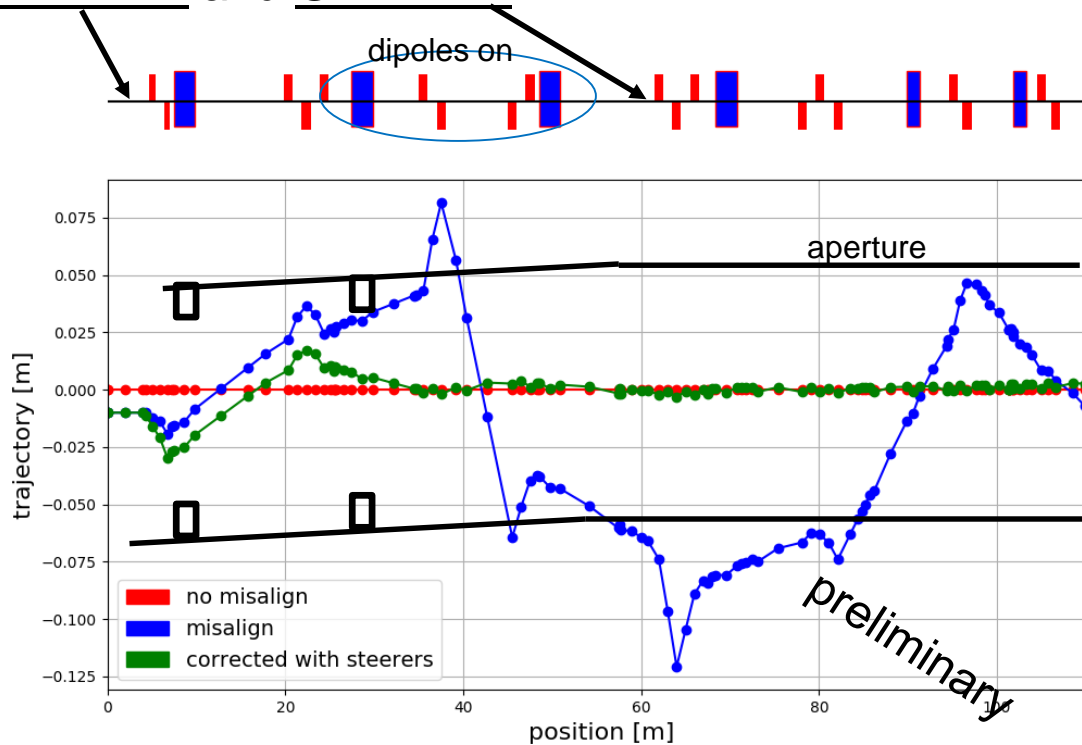
GTS1MU1: -10 mm, misalign = -8 mm, half-aperture = 35 mm,  
expected 2 sigma beam envelope: 10 mm (MIRKO)

# Survey – TE line



# TE line – MADX correction

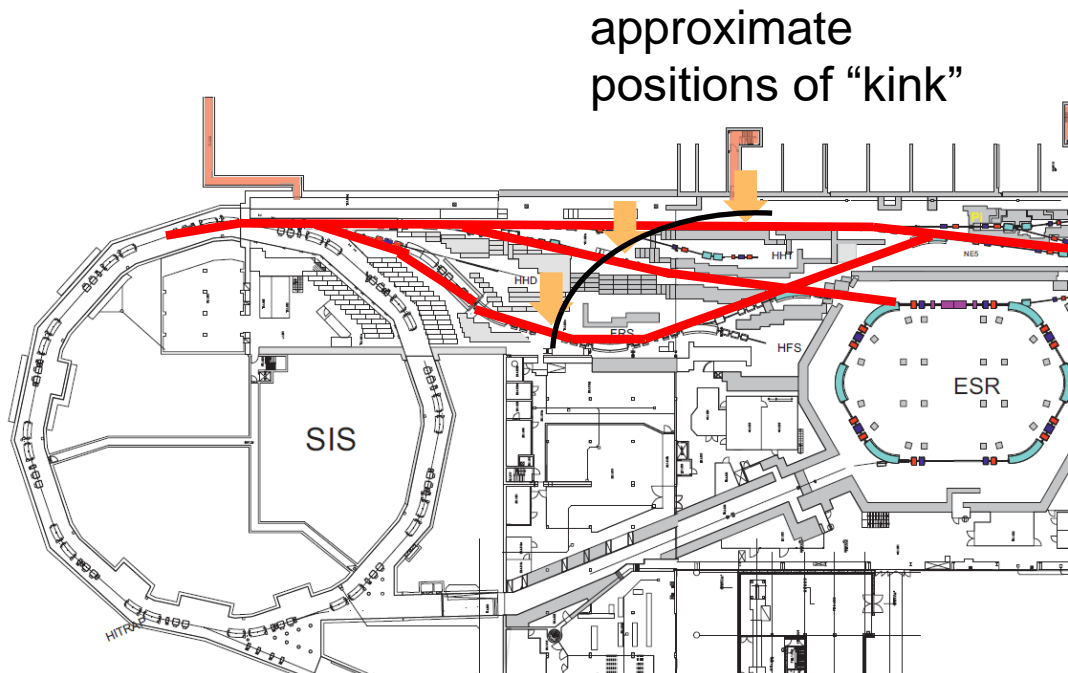
ESR injection optics, affected between steerers:  
GTE1KY1 and GTE4KY1



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

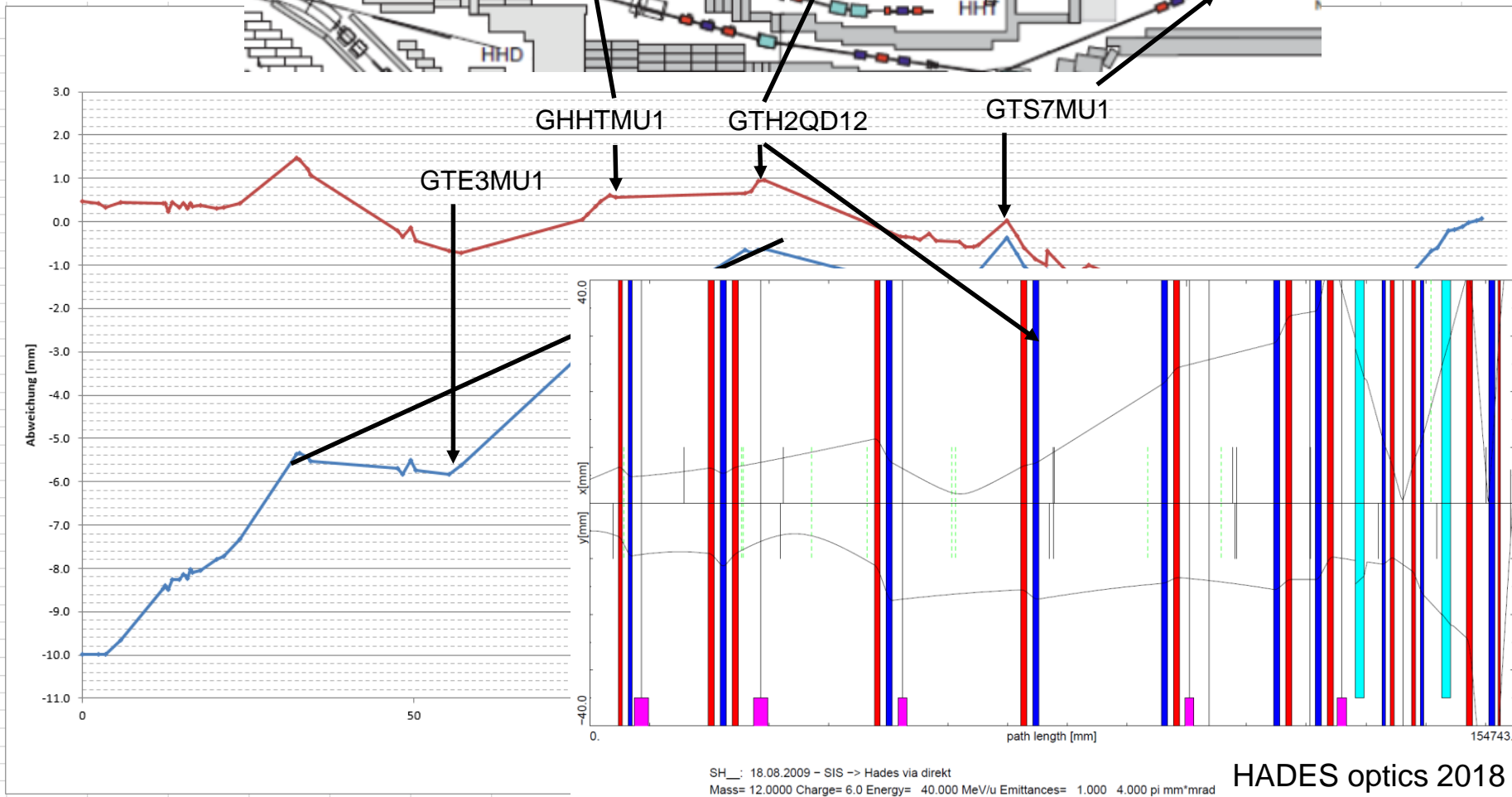
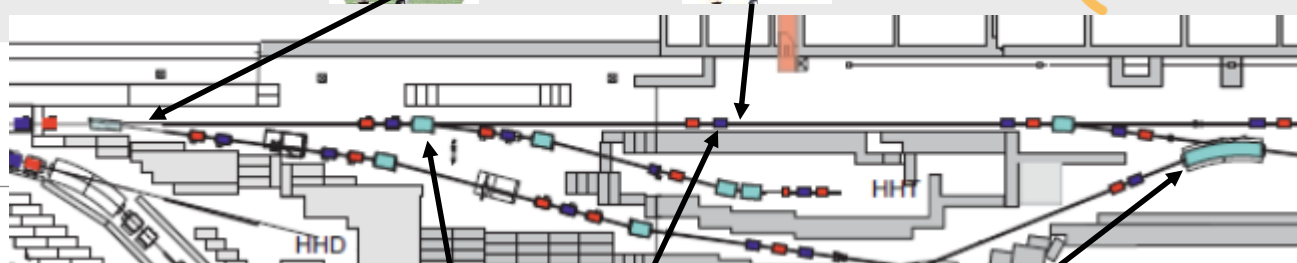
- We can deal with misalignment using existing steerers.
- Our *alignment reference lines* should be a straight extension of SIS18 new reference plane.
- Good alignment is especially important at the beginning of the line; suggested alignments:
  - GTE1QD11: -0.5 mm (vertically defocusing),
  - GTE3MU1 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

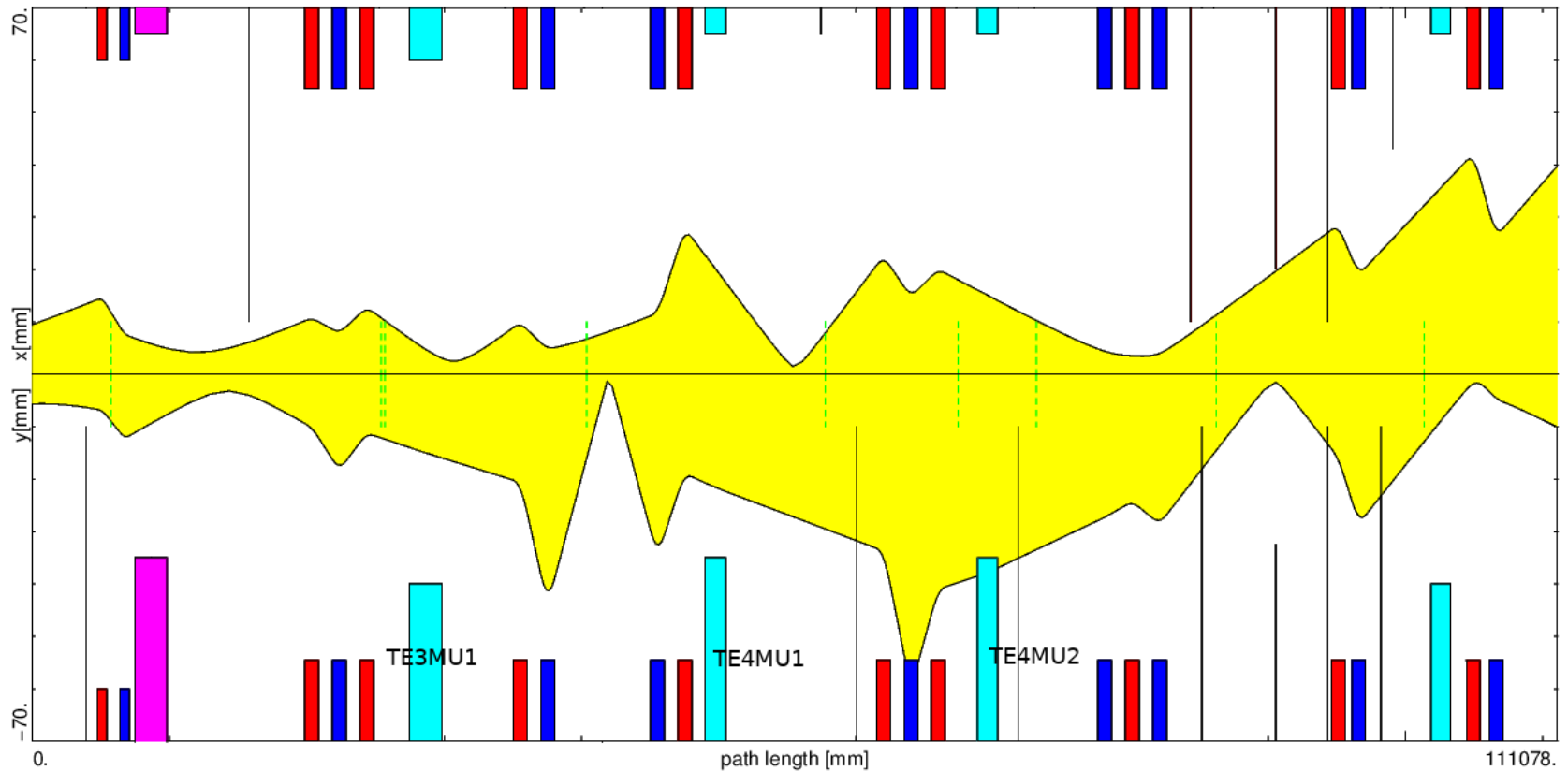




# Survey – TH line



# 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