

# Beam lines - progress report

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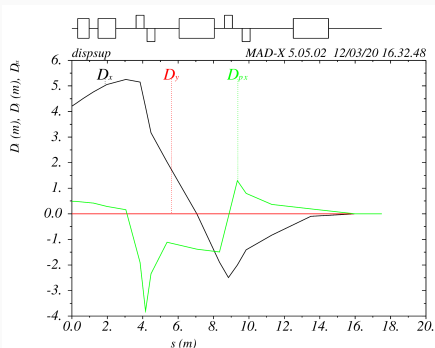
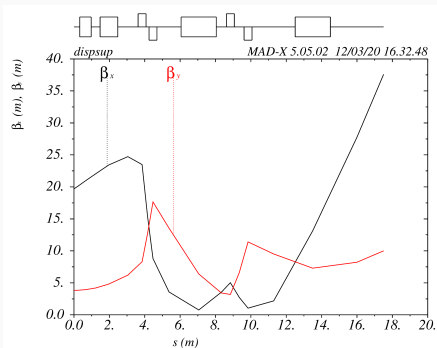
- Matching section shortened, number of magnets reduced
- Good matching for zero dispersion found
- Bending-and-scanning section also shortened
- Modular prolongation section added
- Still a few iterations to do...

All magnets used are realistic

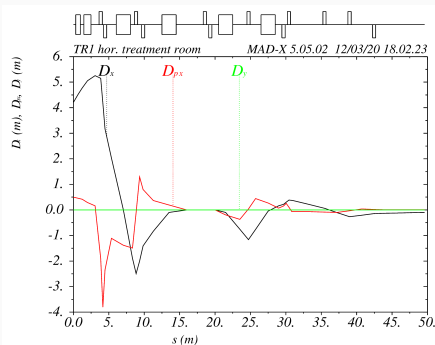
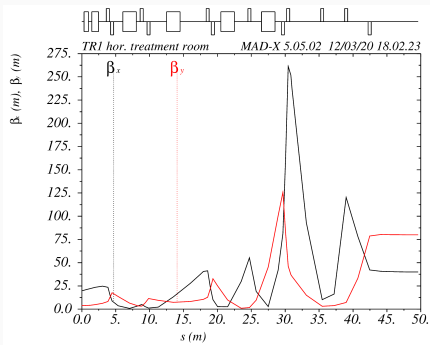
- Dipoles are 1.994 meter long, 22.5 deg (MedAustron dipole)
- Quadrupoles are 45 cm long, maximum  $k_1 = 2.82\text{m}^{-2}$  (MedAustron quads)
- Magnetic Extraction septa are also from MedAustron:
  - (-) thin MES, 65-cm long, 50 mrad,
  - (-) thick MES, 1-meter long, 150 mrad

# Matching section

- constraint, sequence=dispsup, range=#e,  $D_x=0.0$ ,  $D_{px}=0.0$ ,  $BETX<50$ ,  $BETY=10.0$ ;
- constraint, sequence=dispsup, range=#s/mb1.2,  $BETX<120.0$ ,  $BETY<70.0$ ;



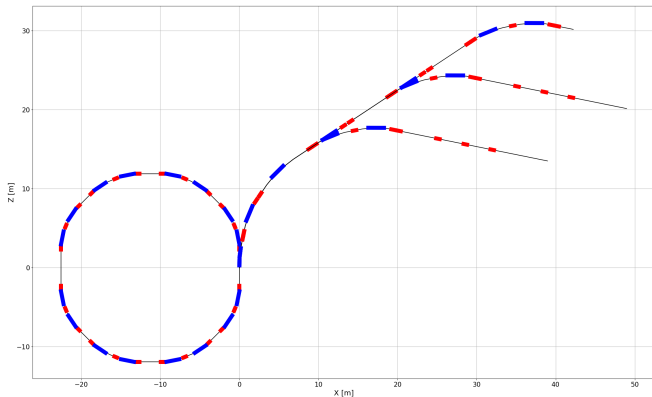
# Horizontal treatment room - work in progress



Total length of TR1 beamline is 50 meters now.

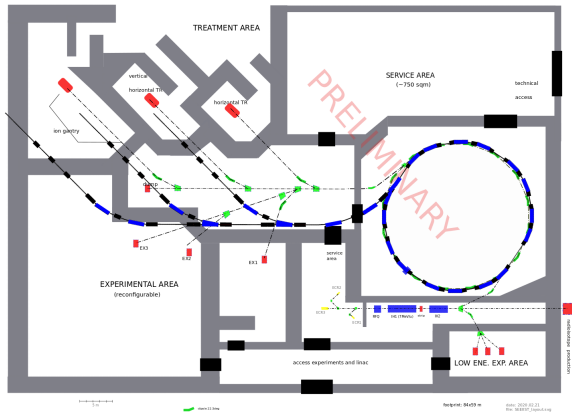
Dispersion not well closed, BETX too large...

# Current layout - medical beam lines



- Synchrotron circumference: 75.24 m (correct?)

# Beamlines with building



- Next iteration: one dipole less in matching section
- Shorten beamlines
- Should fit to the current layout

# Summary

- Need more time to finalize the layout:
  - (-) vertical beamline
  - (-) correct gantry beamline
  - (-) experimental beamline
  - (-) iterative optimization
- Started CDR chapter about slow extraction
- Next: building layout iteration as well
- What do we do with Sarajevo tickets?