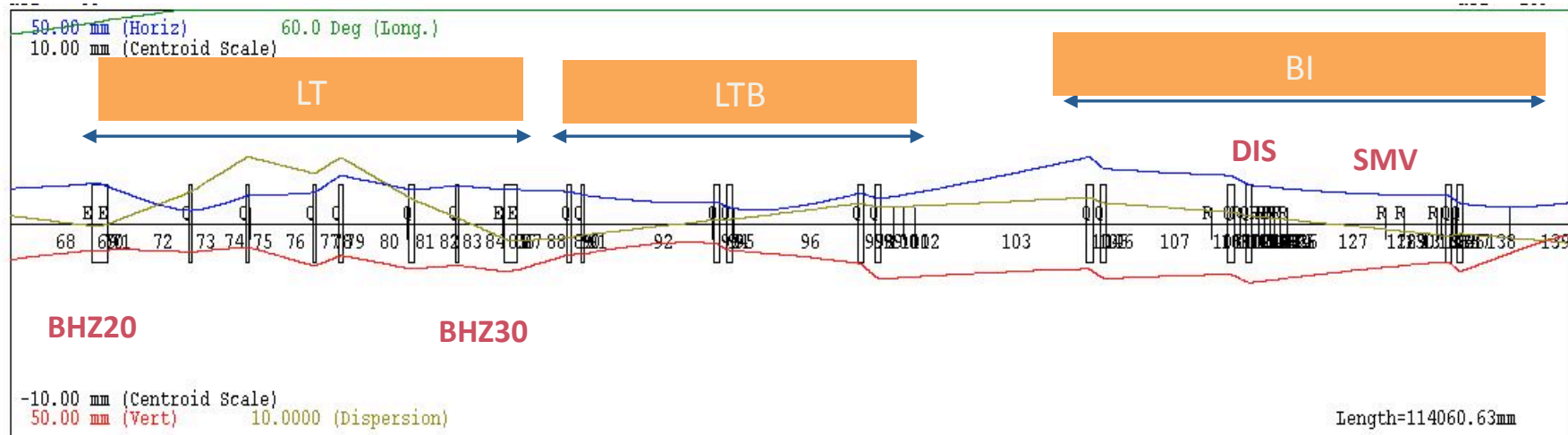
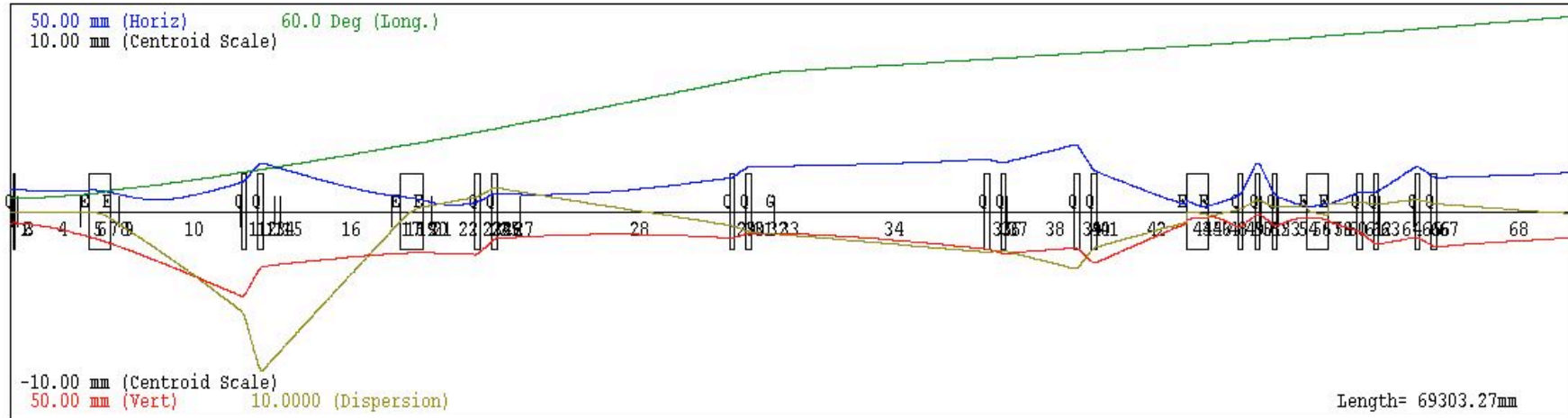


# Proposal for BLM's in Linac4 to PSB transfer line

# New and old transfer line

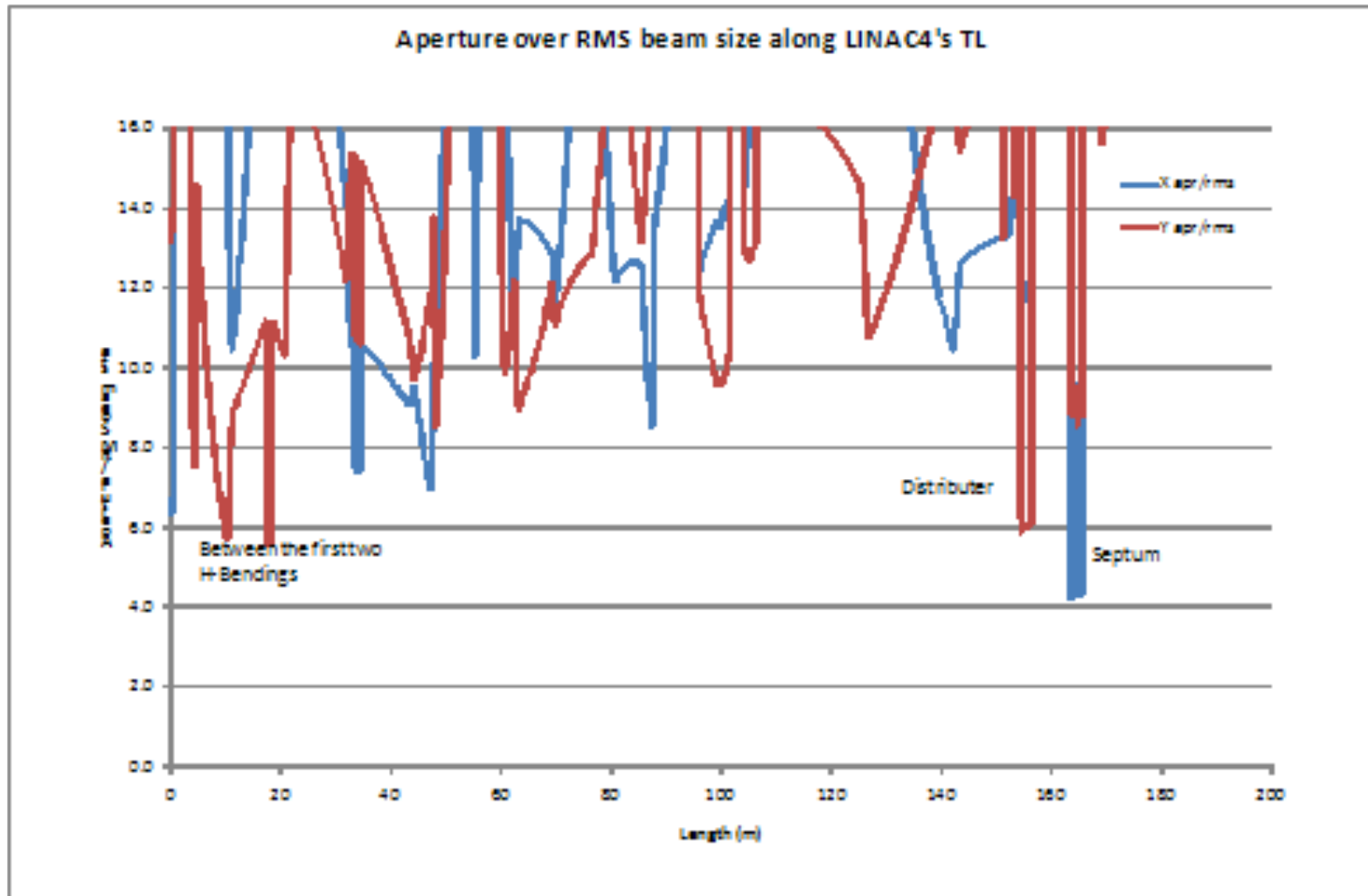


...from G. Bellodi

# Strategy

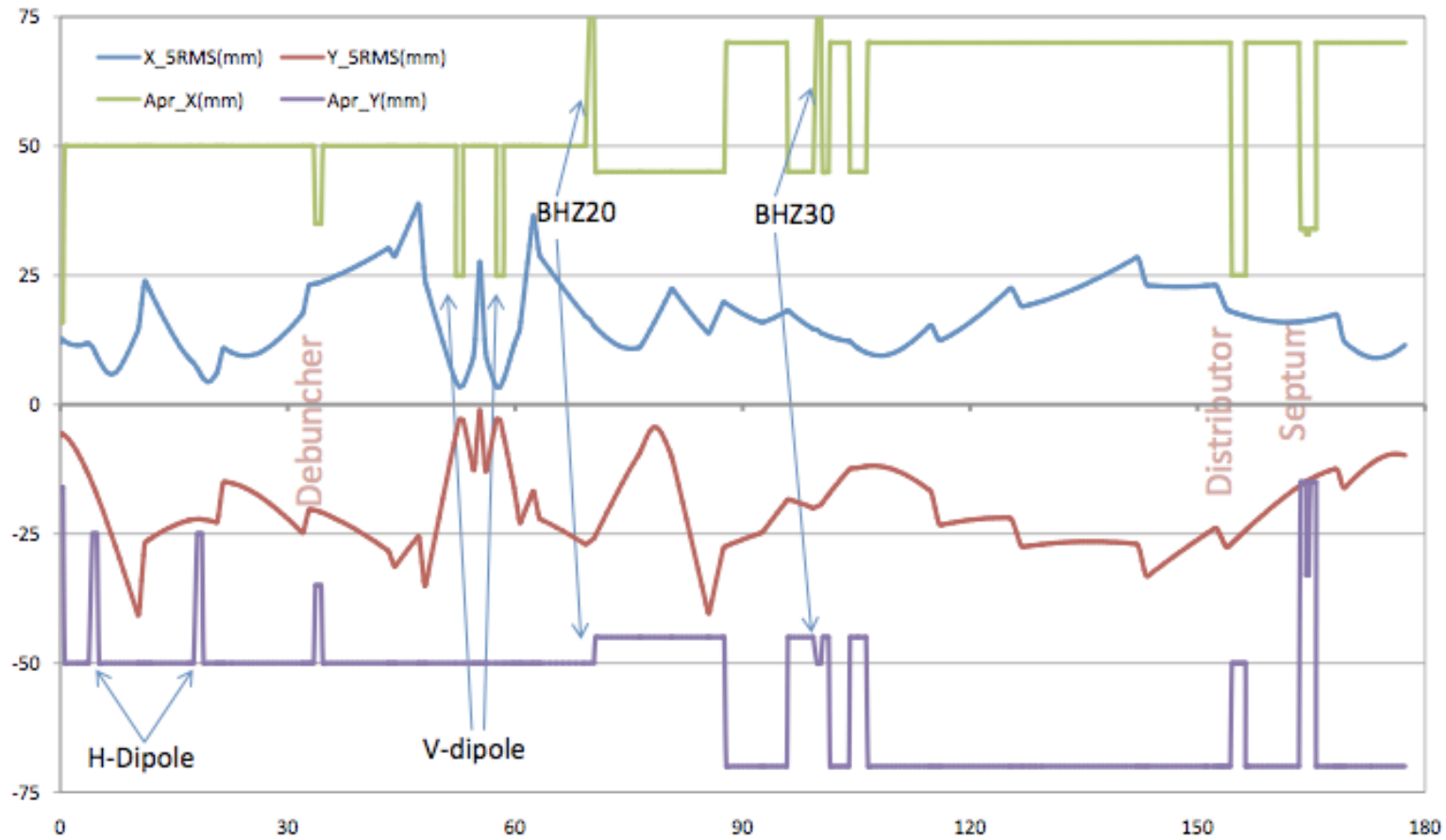
- Place BLM's
  - At aperture limits
  - In high dispersion regions
  - In regions with high losses
  - Close to sensitive equipment
- Additional requirement: location of BLM's should be moderately **flexible** (install already longer cables to be able to move them to possible hot spots)

# Aperture limits



...from M. Eshraqi

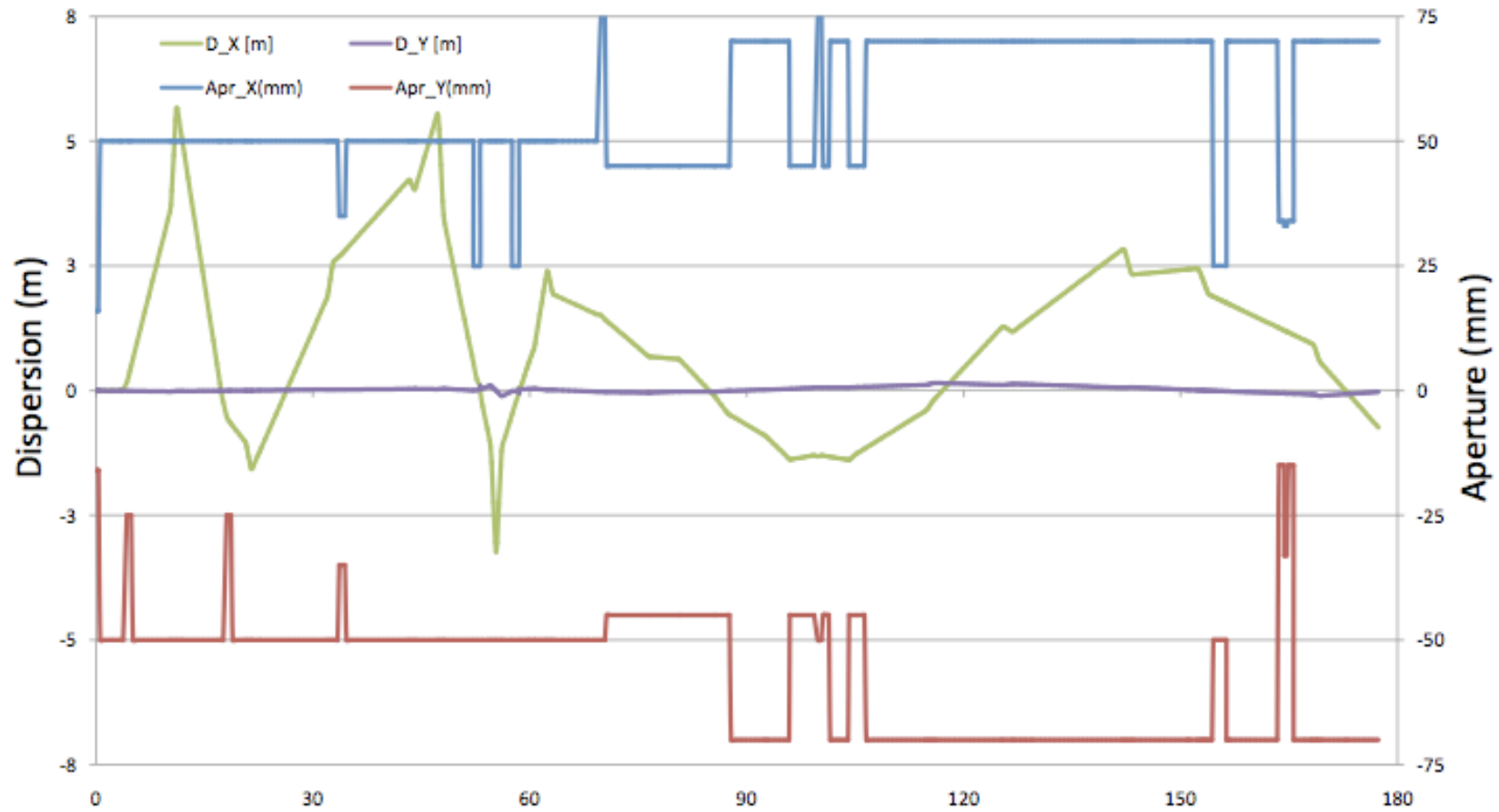
# Aperture limits



Horizontal plane is shown on positive axis and Vertical plane on negative axis

...from M. Eshraqi

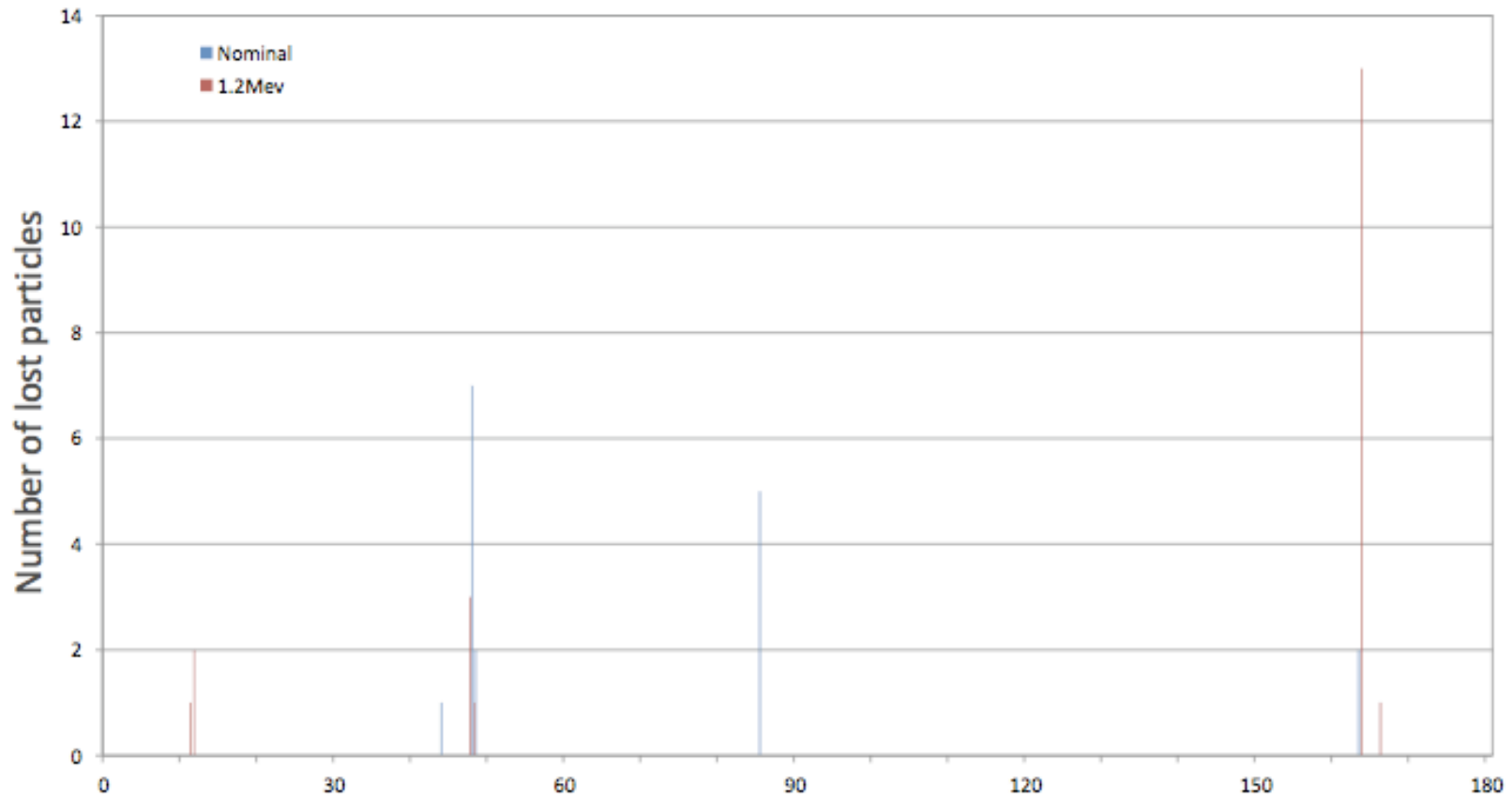
# Dispersion



Aperture is shown just for comparison and has a different scale

...from M. Eshraqi

# Losses



Totally 17 out of 46420 particles were lost in nominal run and 21 in case of 1.2MeV energy shift

...from M. Eshraqi

# Proposal

## New transfer line:

- 1 BLM betw. 2 hor. bendings at start of new transfer line
- 1 BLM after debuncher
- 1 BLM after last quad before 2 vert. bendings (hor. aperture/rms beam size; high dispersion)
- 1 BLM betw. 2 vert. bendings (high dispersion)
- 1 BLM after first quad after 2 vert. bendings (hor. aperture/rms beam size)

## Old transfer line:

- 1 BLM betw. LTB.BHZ20 and LTB.BHZ30 around LTB.QDN65 (vert. aperture/rms beam size)
- 1 BLM after the distributor (location of [BI.MBL 10](#))
- 1 BLM close to septum (location of [BI.MBL 20](#))
- 1 BLM before BI.BVT (location of [BI.MBL 30](#))
- 1 BLM close to stripper foil???
- 1 BLM at location of [BI.MBL40](#) – do we need this one???
  
- Do we need a BLM in Linac4 dump line and in LBE/LBS line? (do we have a transformer there?)



# Summary

- Very rough account of number of BLMs required (should compare to new simulations...)
  - Need **min. of 10 BLMs**
  - Should we **add ~3 BLMs** to be placed where needed?
- Can we simulate effect of PS fringe field on beam?