

Questions from Stan Yen  
March 18, 2022

with annotations from  
the meeting



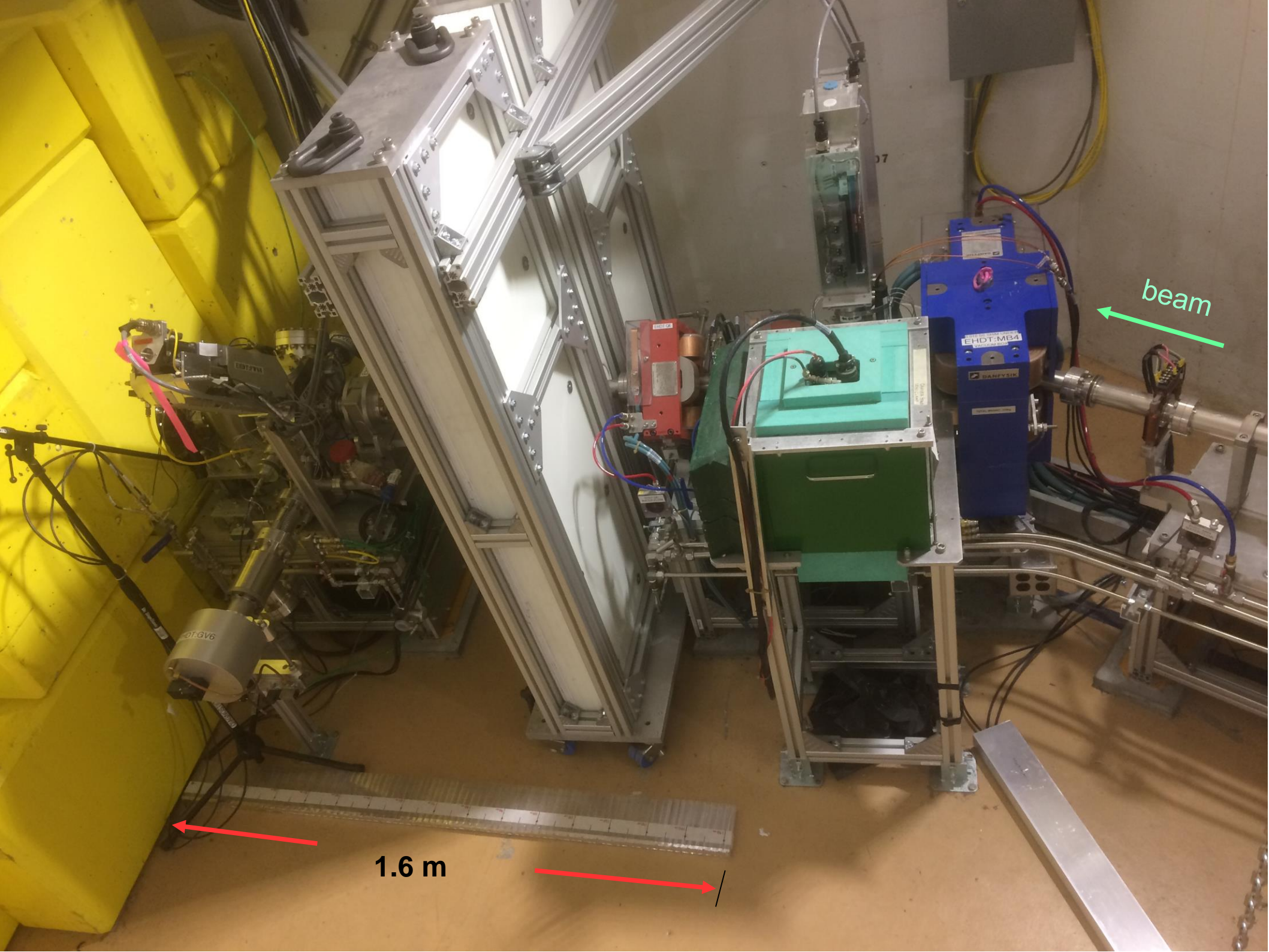


4000 LBS

1000 LBS  
WITH LID  
210150

SWL 1 TON

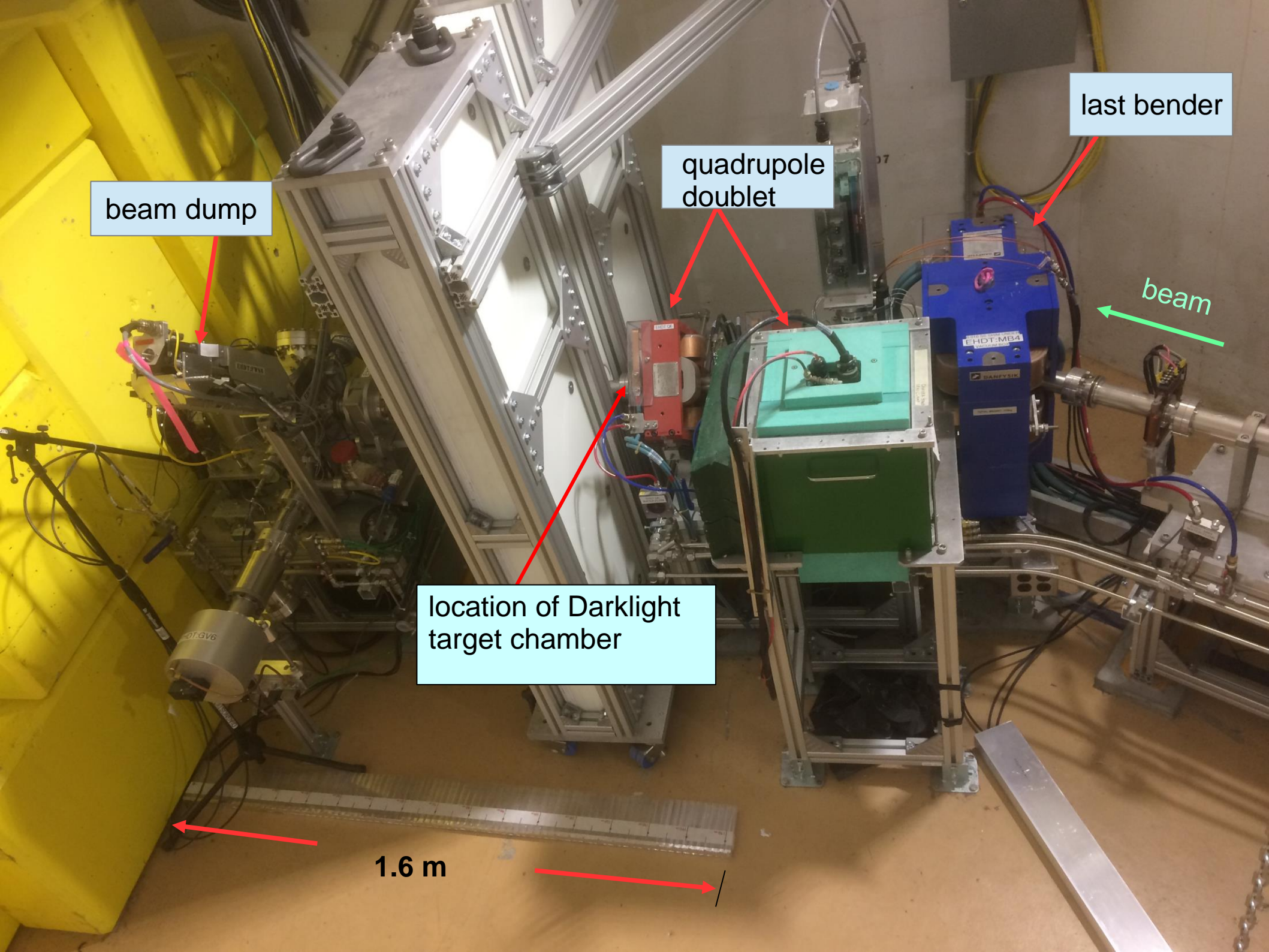




beam

1.6 m





last bender

beam dump

quadrupole doublet

beam

location of Darklight target chamber

1.6 m

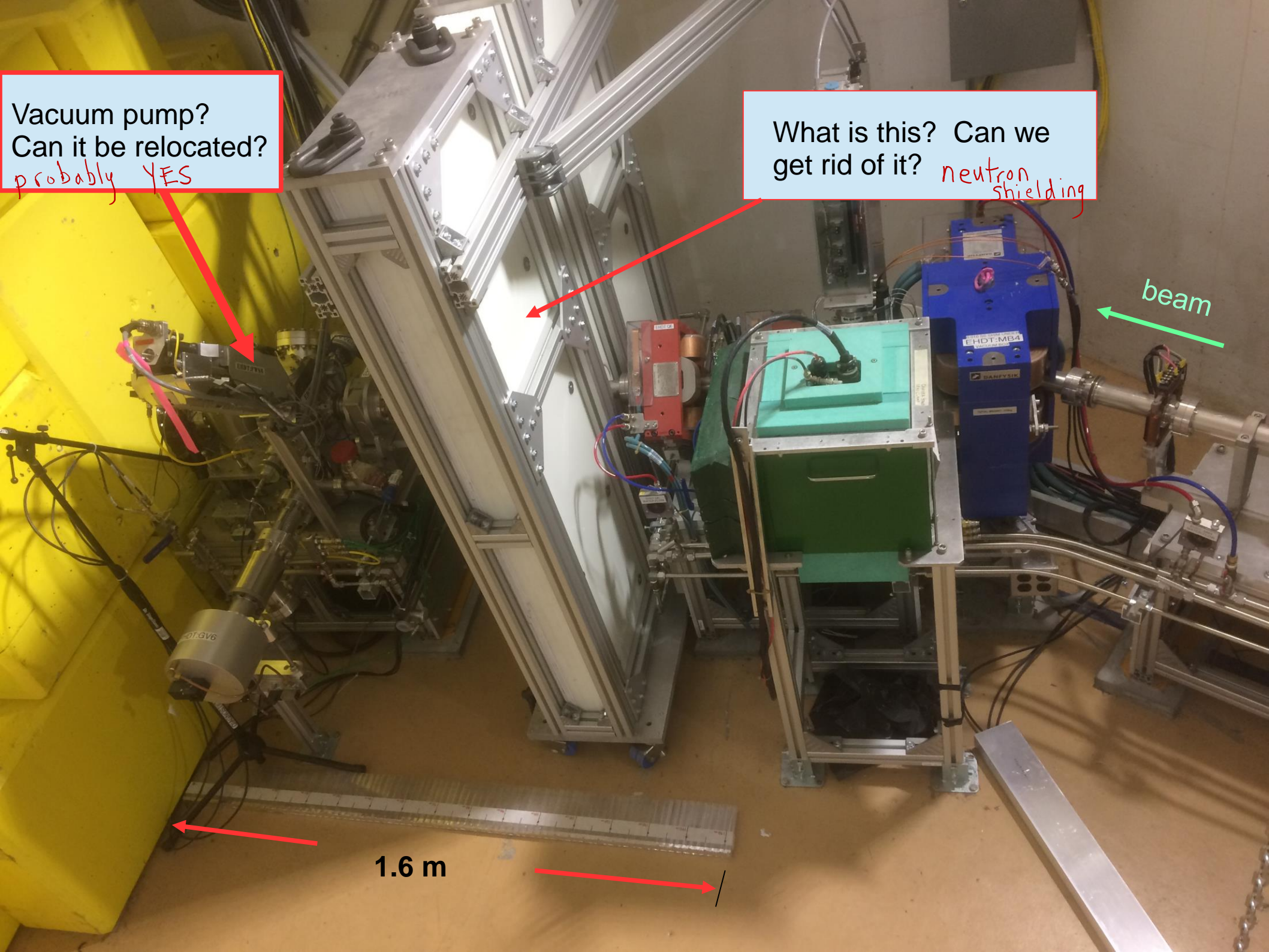


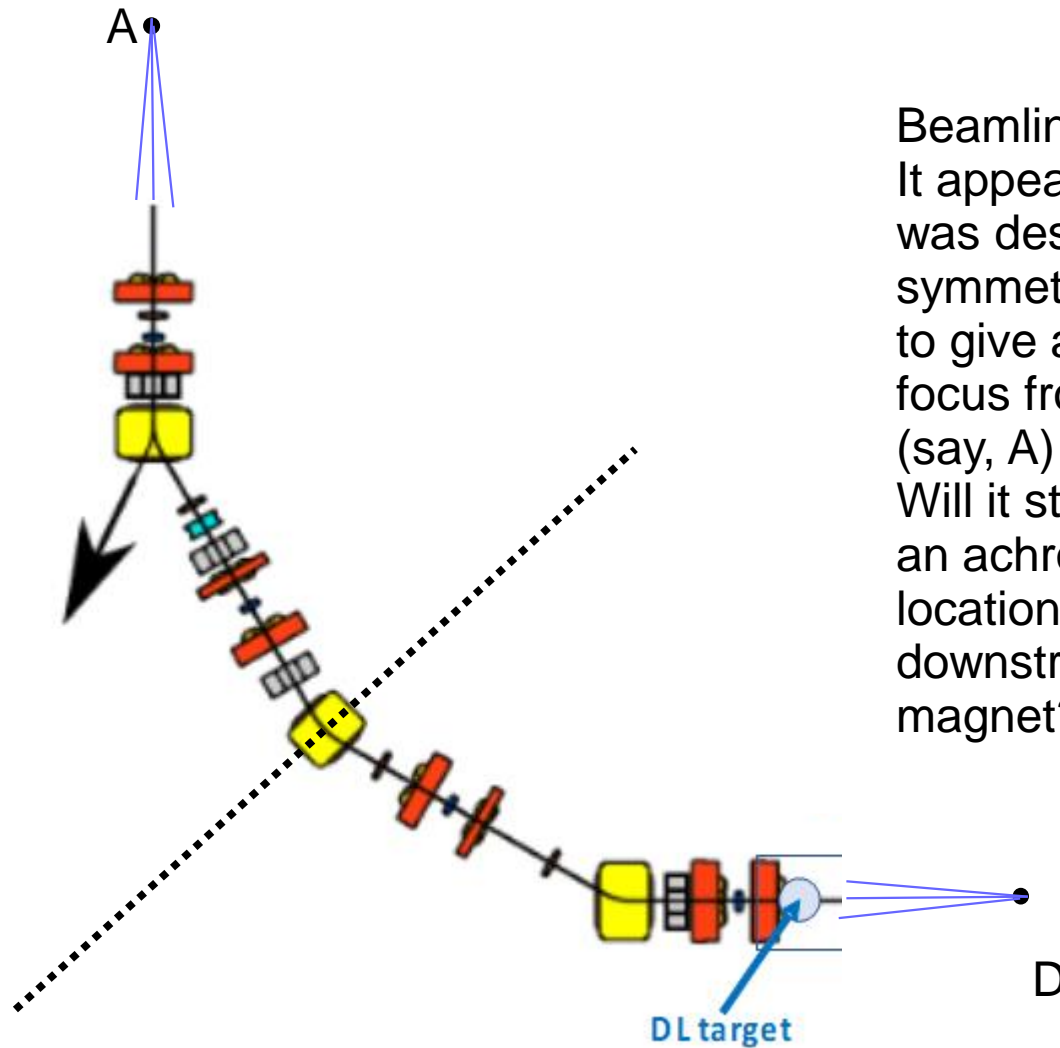
Vacuum pump?  
Can it be relocated?  
*probably YES*

What is this? Can we  
get rid of it? *neutron  
shielding*

*beam*

1.6 m

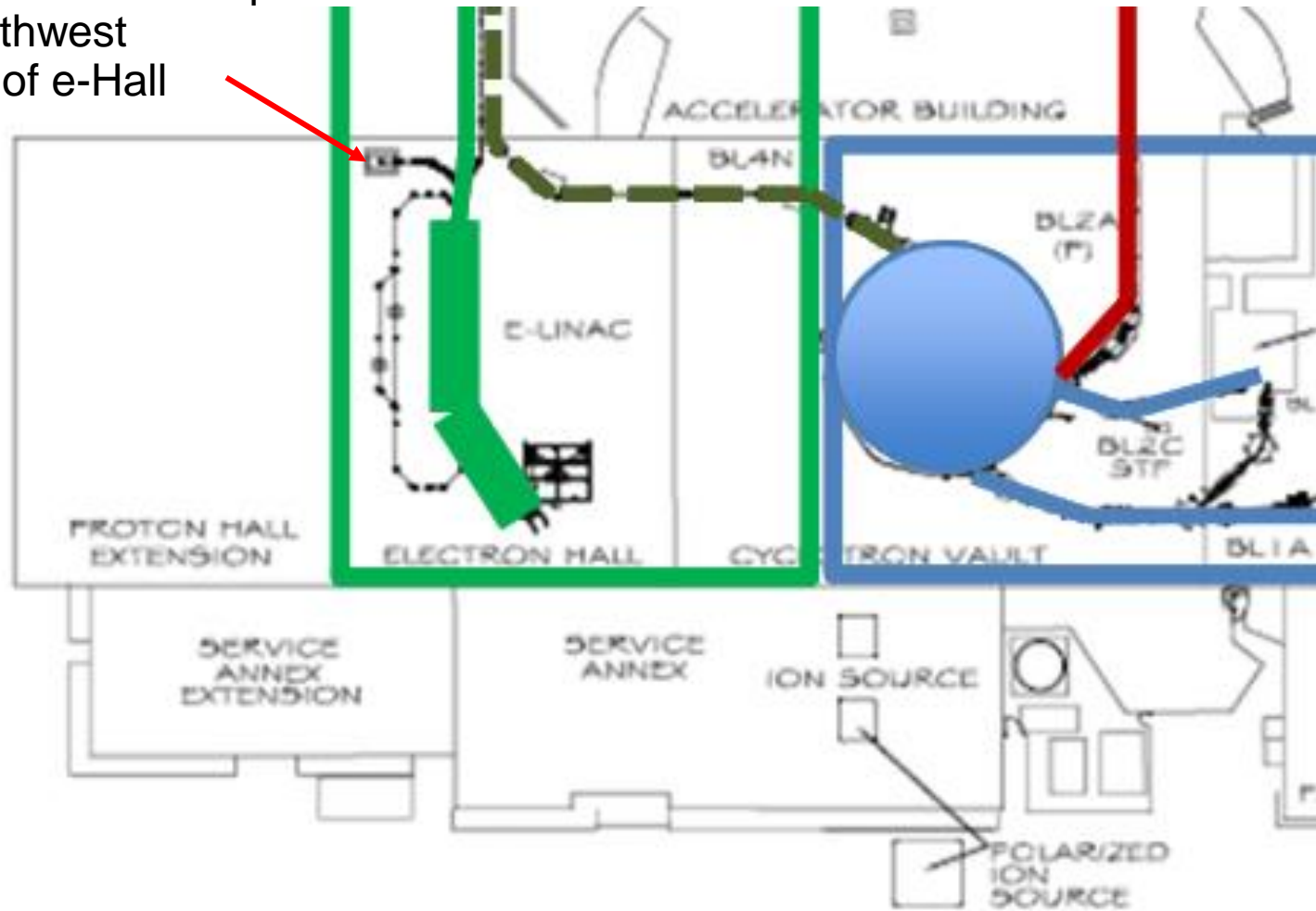




Beamline optics question:  
 It appears that the beam transport was designed with a mirror reflection symmetry about the dashed line, to give a point-to-point achromatic focus from some point upstream (say, A) to the beam dump (D) Will it still be possible to achieve an achromatic focus at the DL target location, located such a short distance downstream of the last quadrupole magnet?

*This is being studied by Aveen*

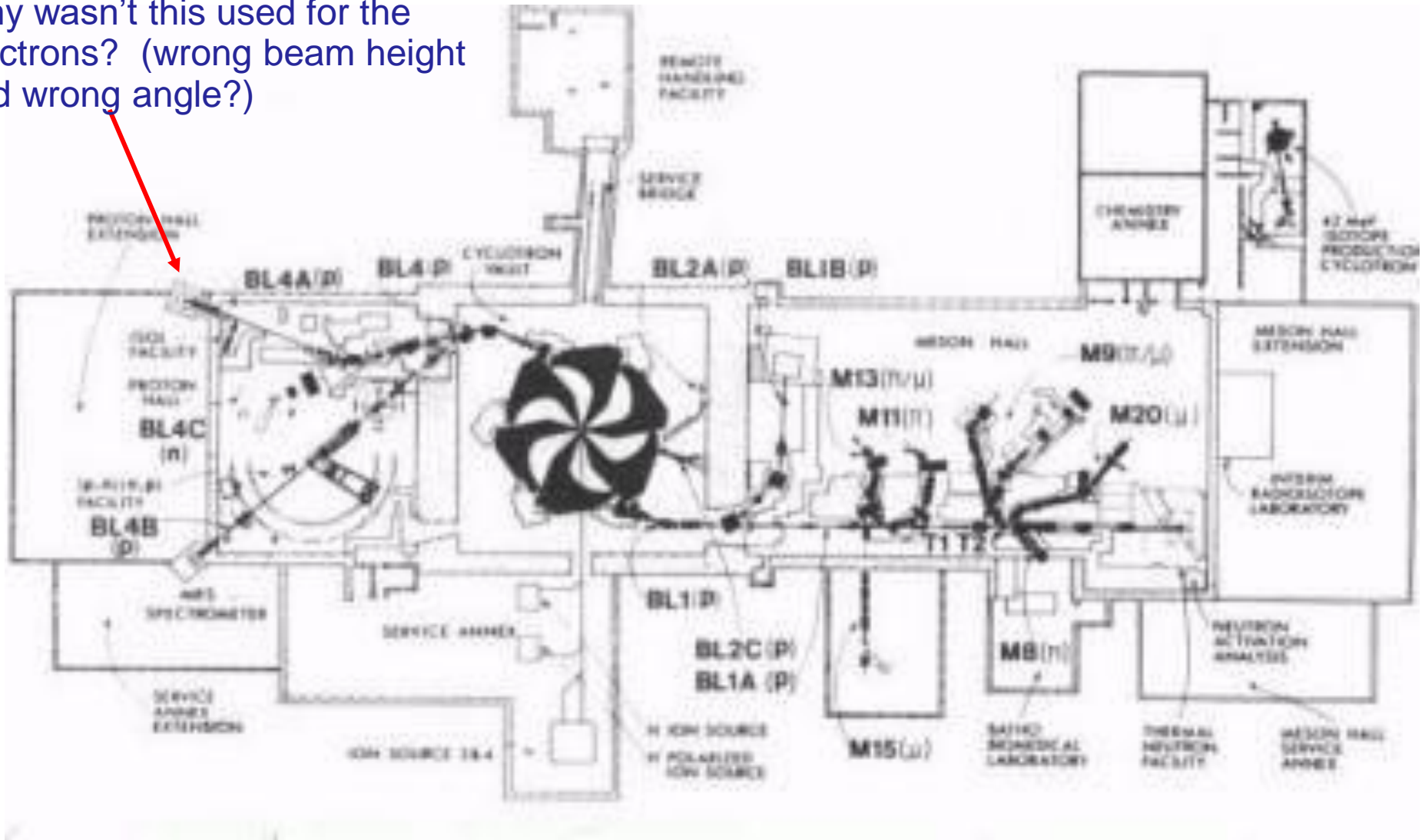
Electron beam dump  
in northwest  
corner of e-Hall





There is a buried beam dump for the old 4A proton beamline  
In the northwest corner of the old proton hall (now e-Hall).  
Why wasn't this used for the electrons? (wrong beam height  
and wrong angle?)

Bob Laxdal comment:  
Regard present beam dump as  
permanent and unchangeable.

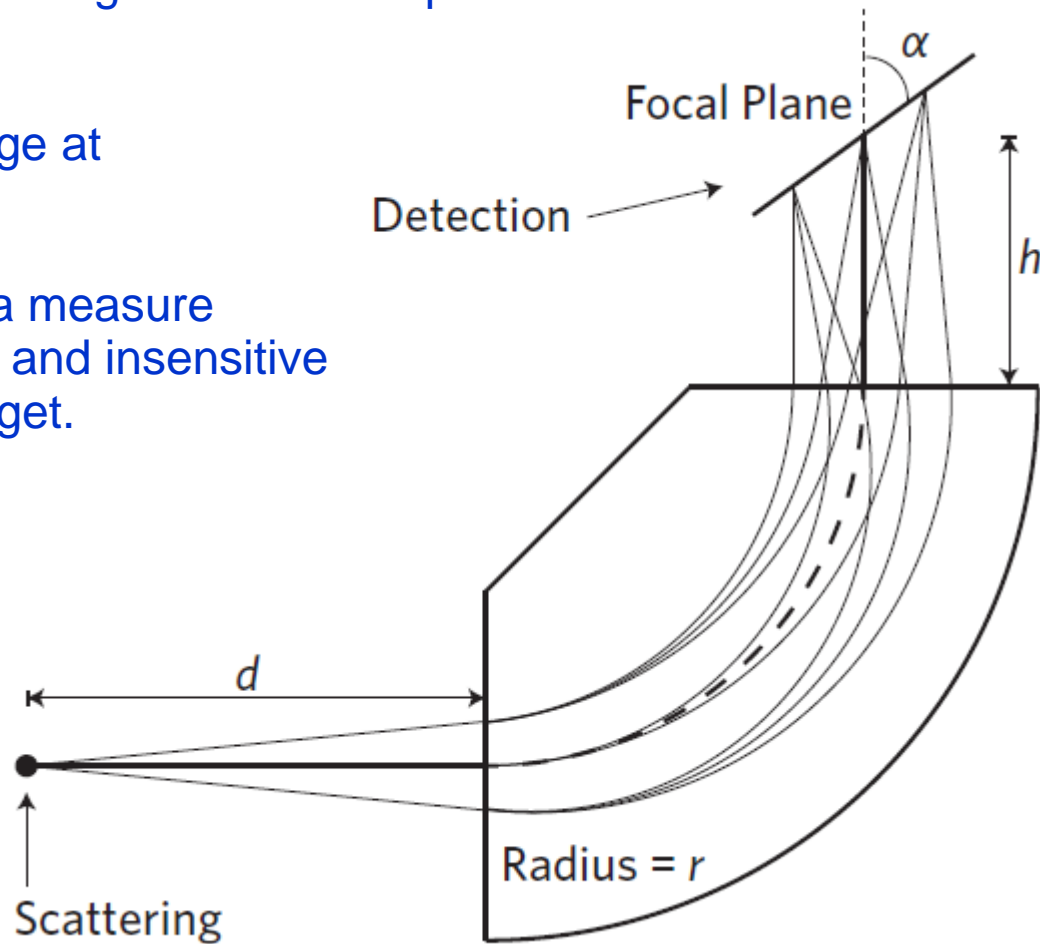


Question re optics of spectrometer magnet:

We have point-to-point focus in the bend (vertical) direction, i.e. rays emerging at all angles from the point target location, all converge at the same point on the focal plane

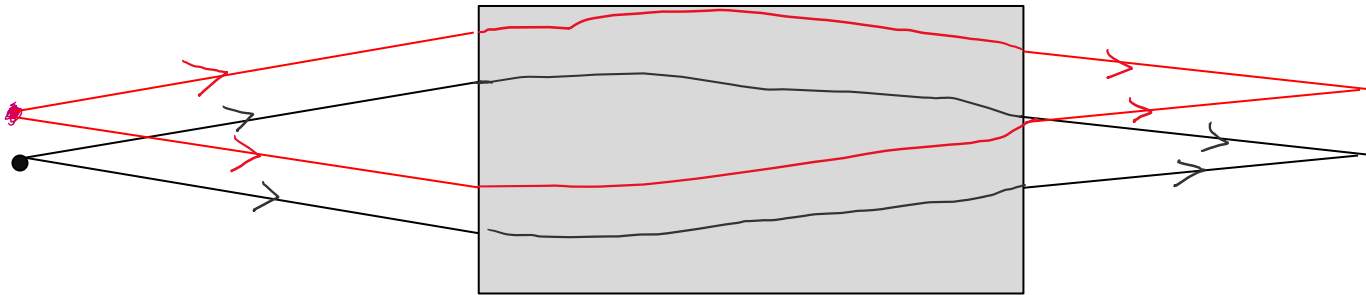
Different momenta converge at different positions

So focal plane position is a measure of the particle momentum, and insensitive to initial angle from the target.





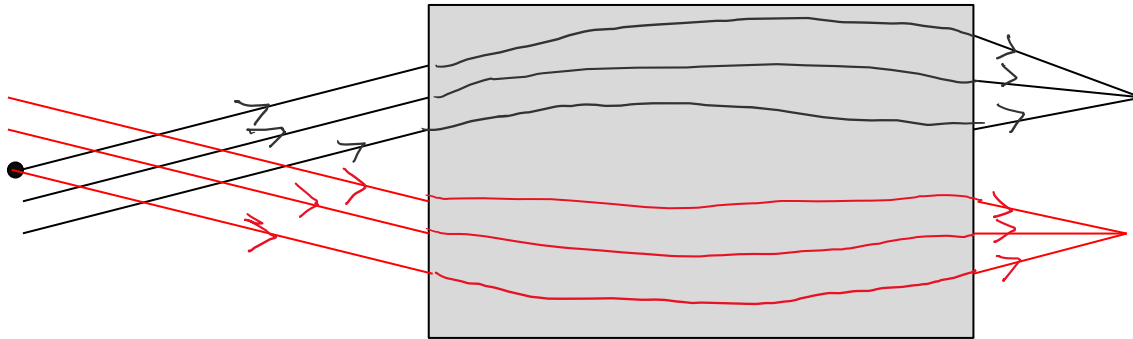
What about in the orthogonal (non-bend, or horizontal) direction?  
Is the focusing still point-to-point, like this:



so that the final position is proportional to the initial position, and insensitive to the initial angle?

No, not like this

Or is the non-bend plane focusing condition parallel-to-point like this:



where the final position is a measure of the initial angle,  
and insensitive to the initial position?

Yes, like  
this

Which focus condition do we have in the non-bend plane,  
~~point-to-point~~, or parallel-to-point?