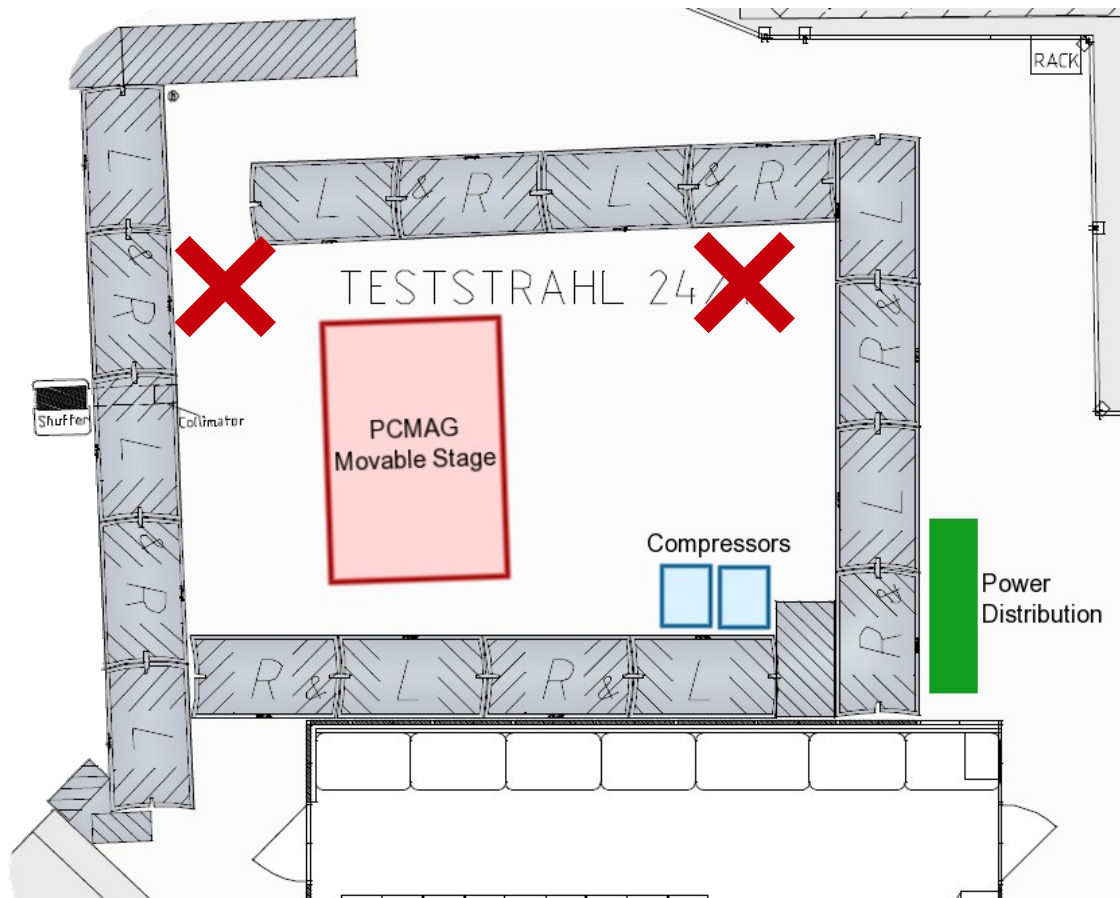


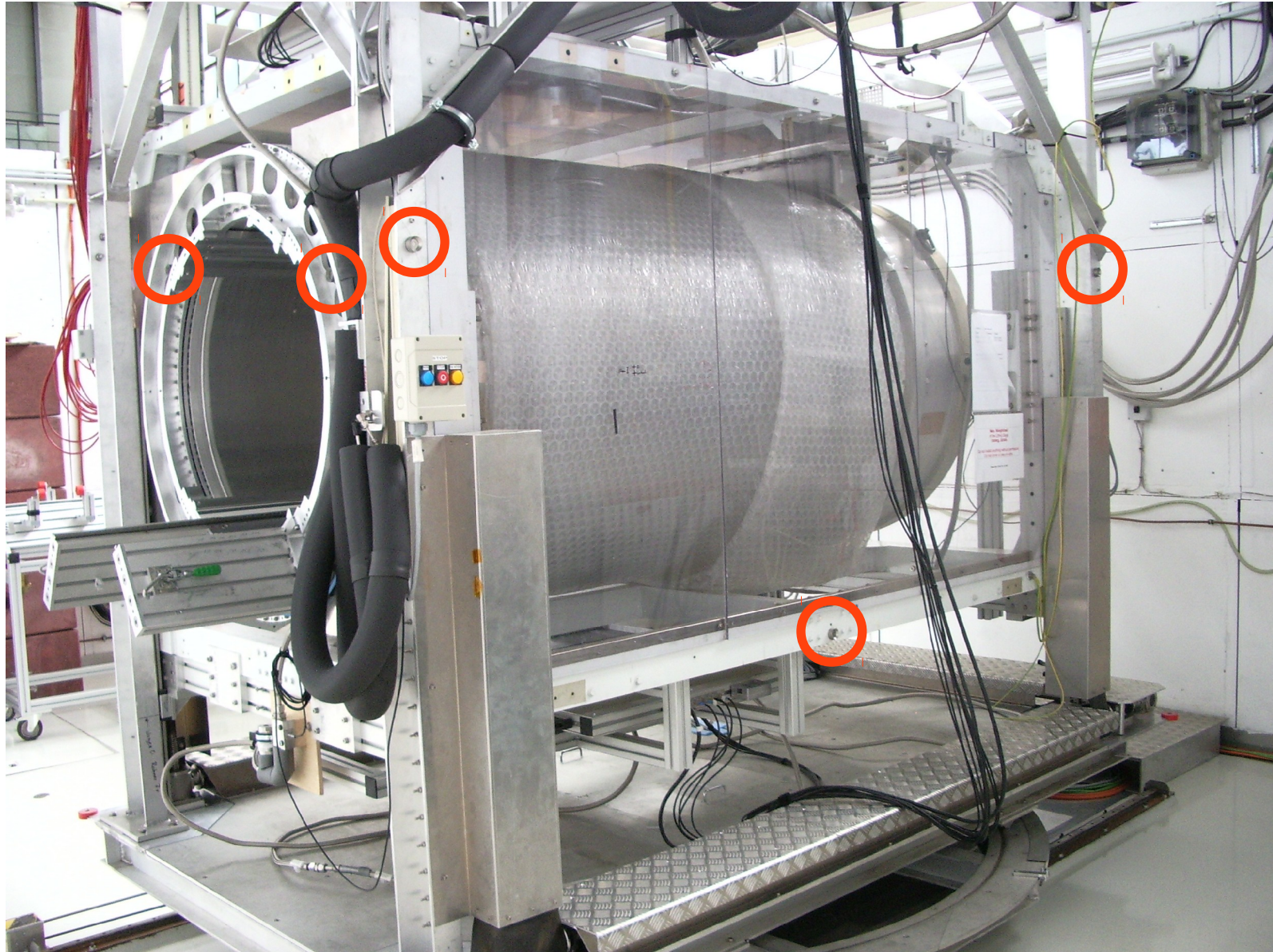
- During stage tests:
impression of small jerks and up/down fluctuations of stage during rotations
- Probable reason:
not completely flat ring on which the 6 wheels of the stage run during rotation
(not continuously supported by girders)



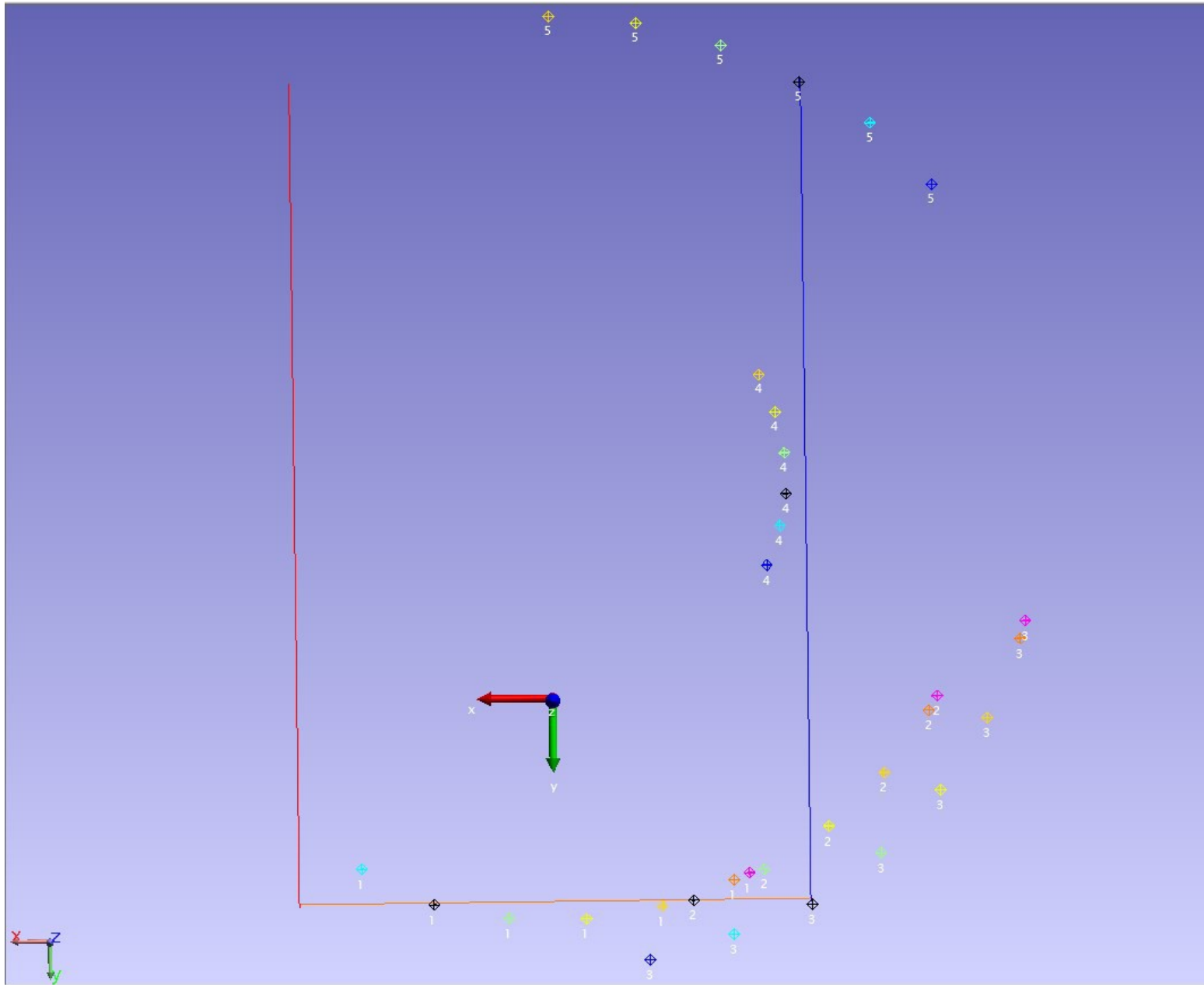
- Survey group measured height of reference points with laser system from 2 points in the area (due to available space) during rotation



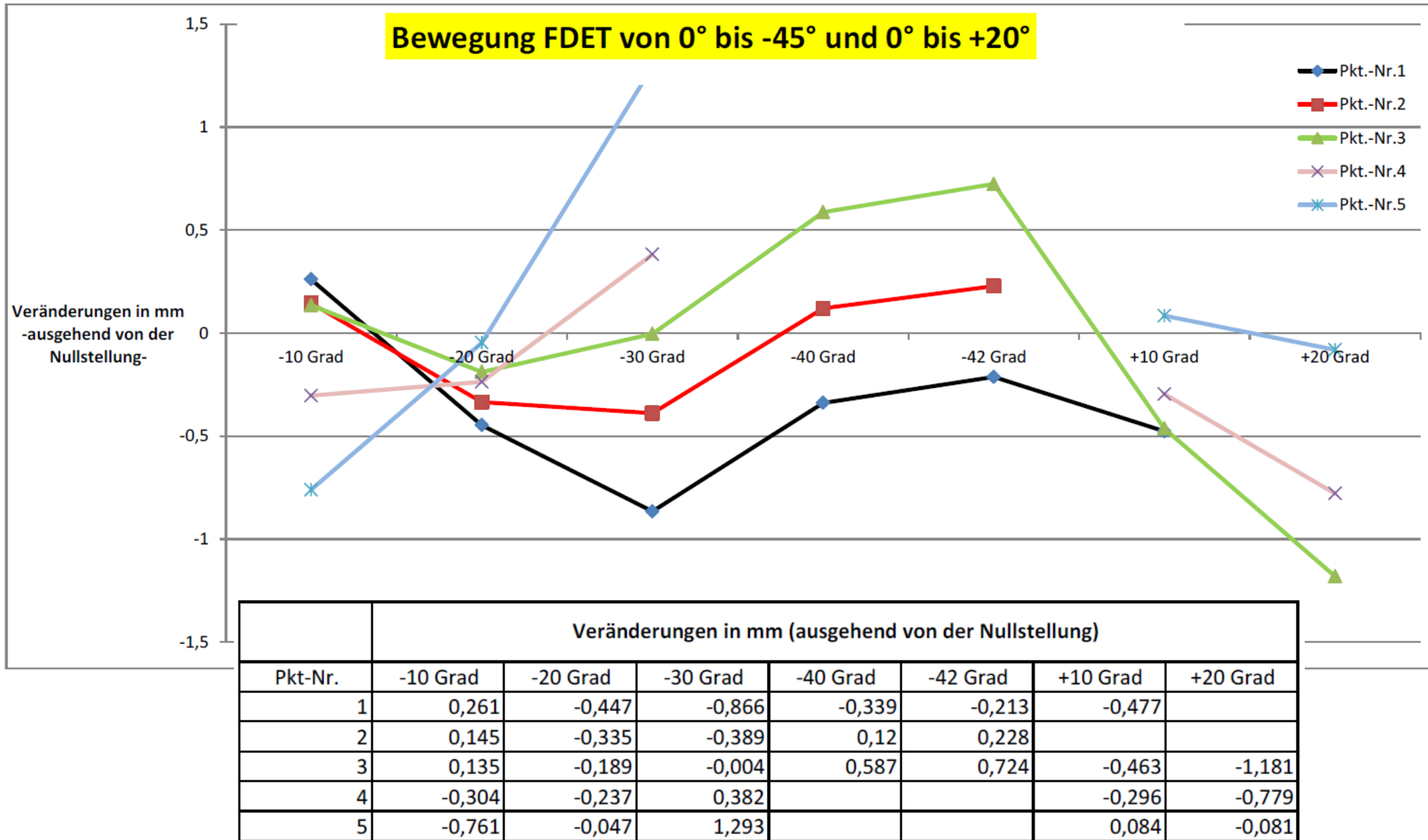
- Reference points on “south side”



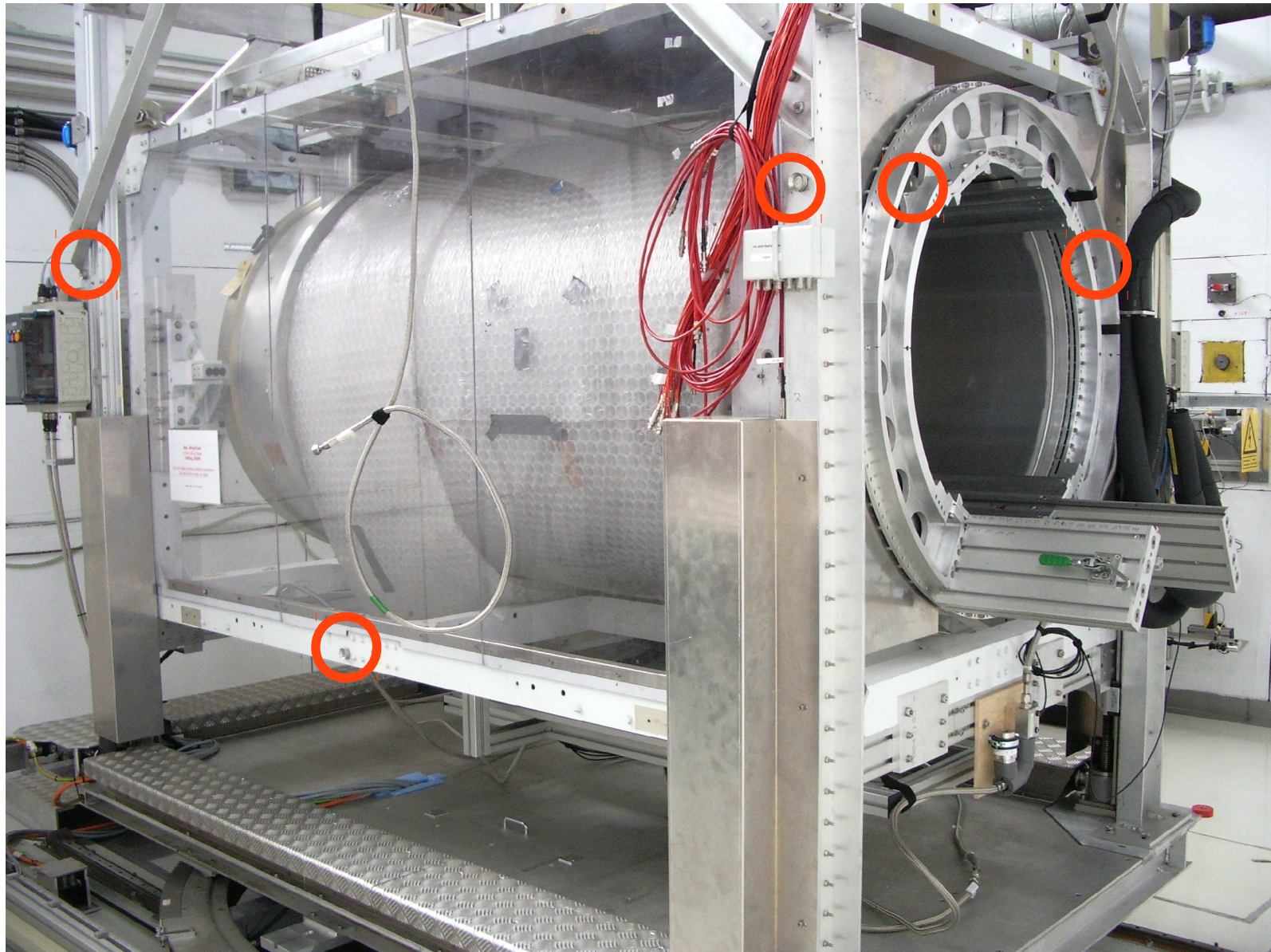
- Measurements for movement from 0° to -45° and from 0° to $+20^\circ$



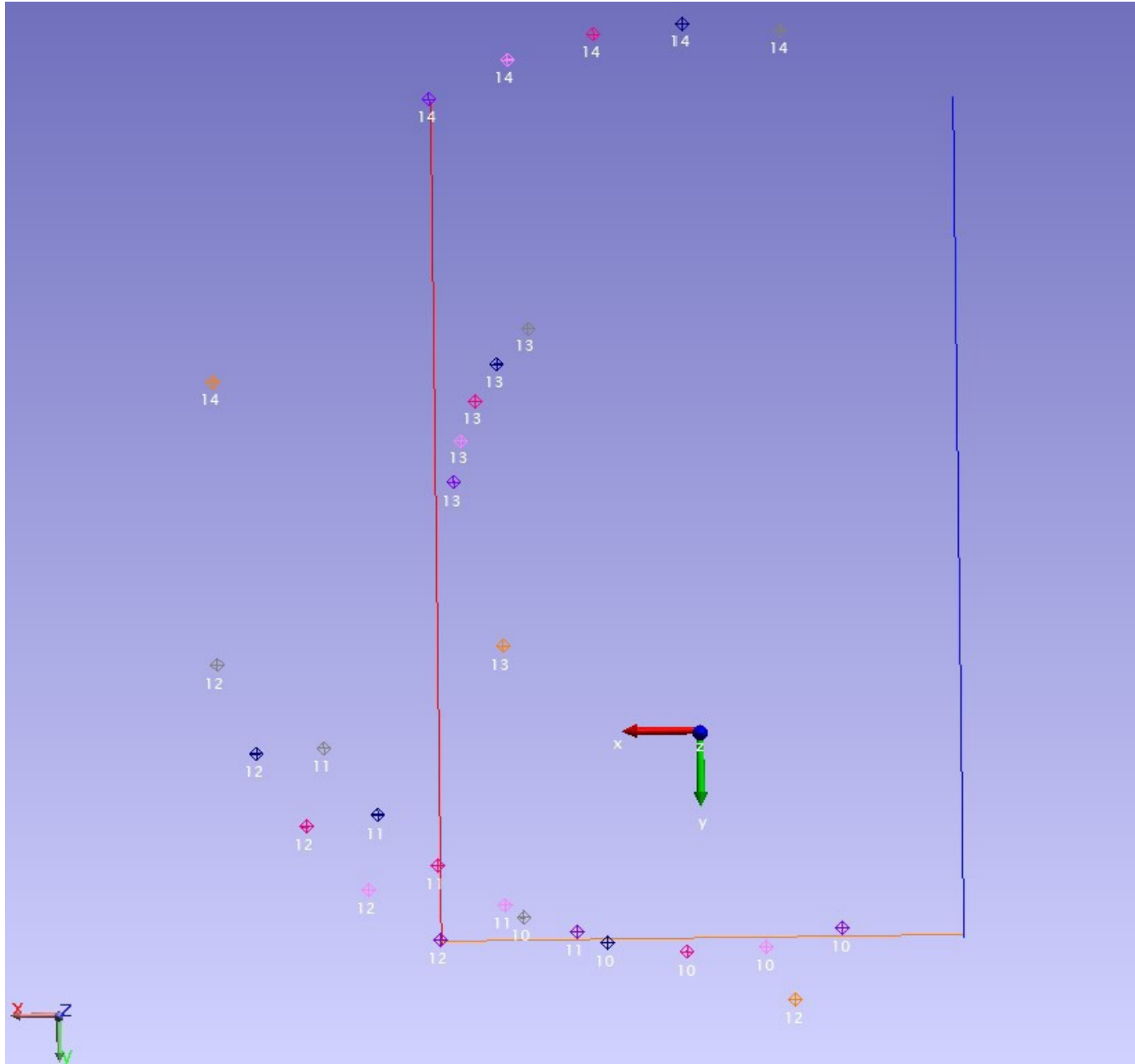
- Movement from 0° to -45° and from 0° to +20°



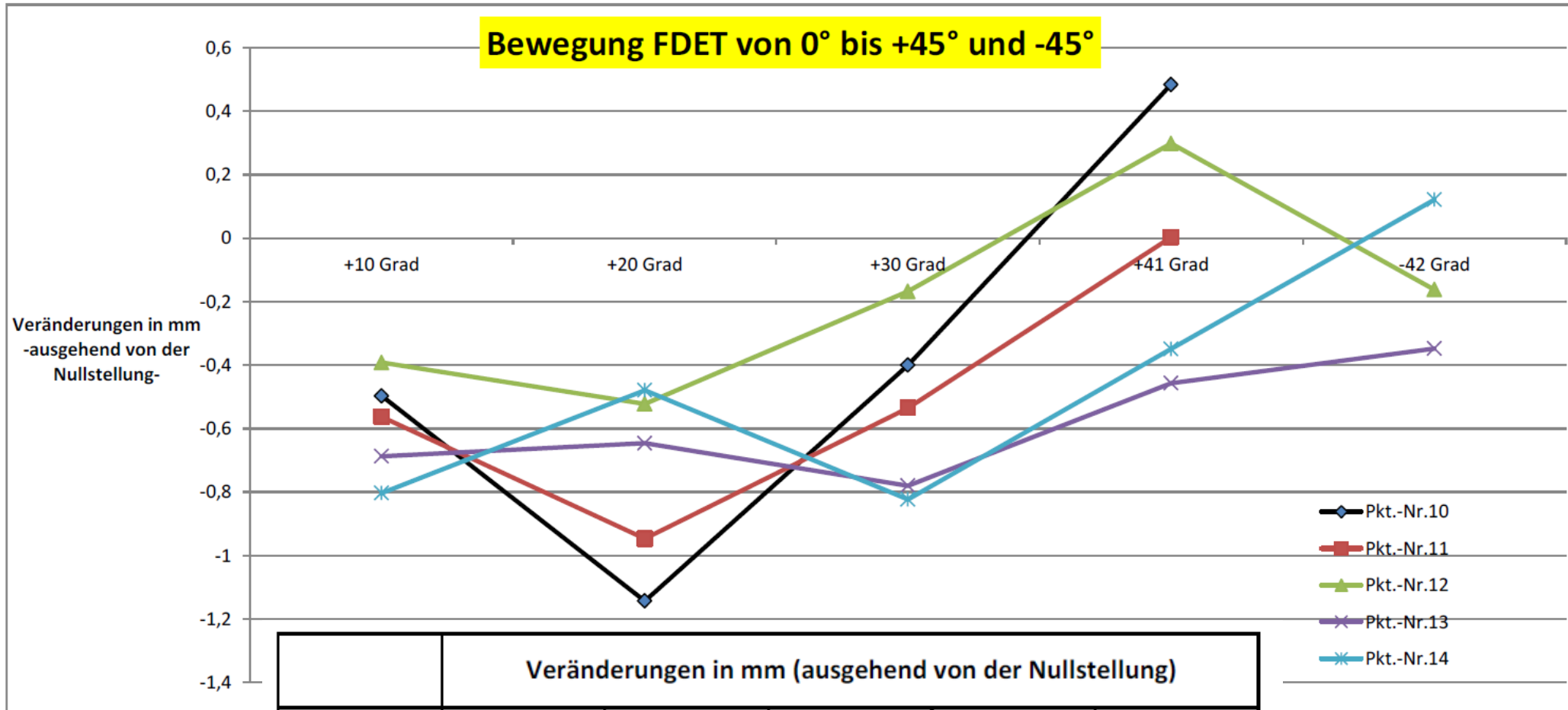
- Reference points on “north side”



- Measurements for movement from 0° to $+45^\circ$ and -45°



- Movement from 0° to +45° and -45°

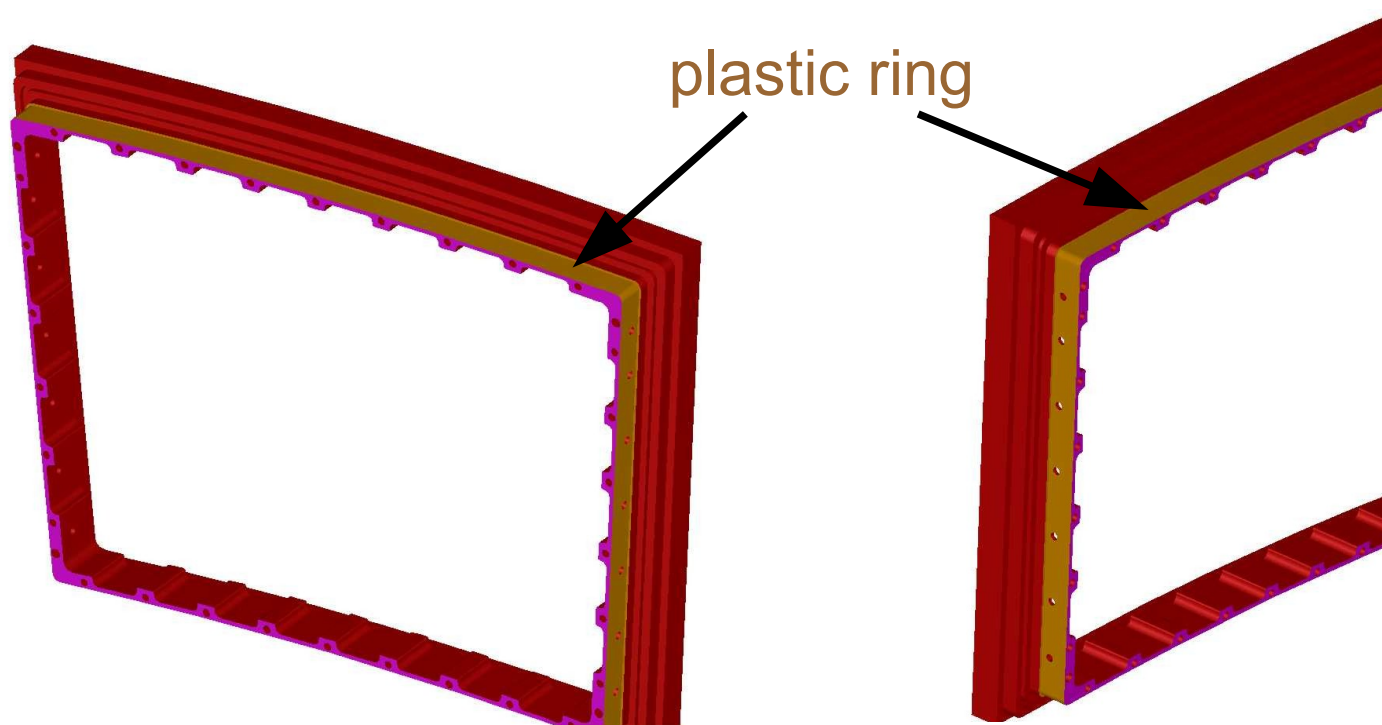


Veränderungen in mm (ausgehend von der Nullstellung)					
Pkt.-Nr.	+10 Grad	+20 Grad	+30 Grad	+41 Grad	-42 Grad
10	-0,497	-1,143	-0,4	0,484	
11	-0,563	-0,947	-0,535	0,003	
12	-0,392	-0,522	-0,168	0,298	-0,162
13	-0,687	-0,646	-0,78	-0,457	-0,348
14	-0,803	-0,479	-0,823	-0,349	0,121

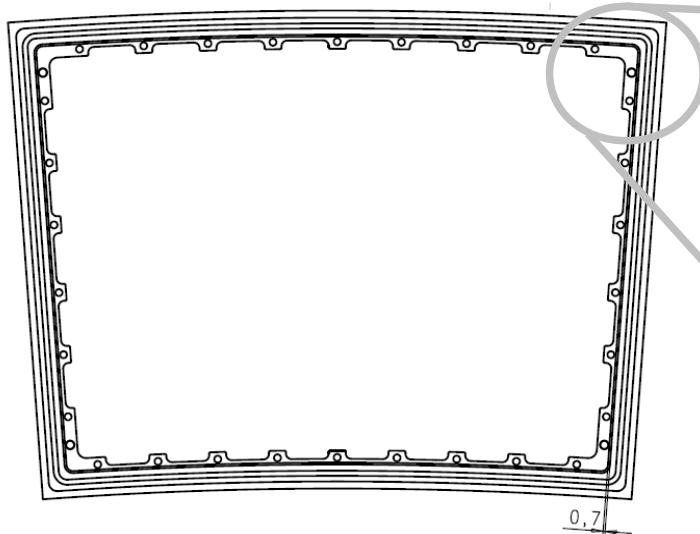
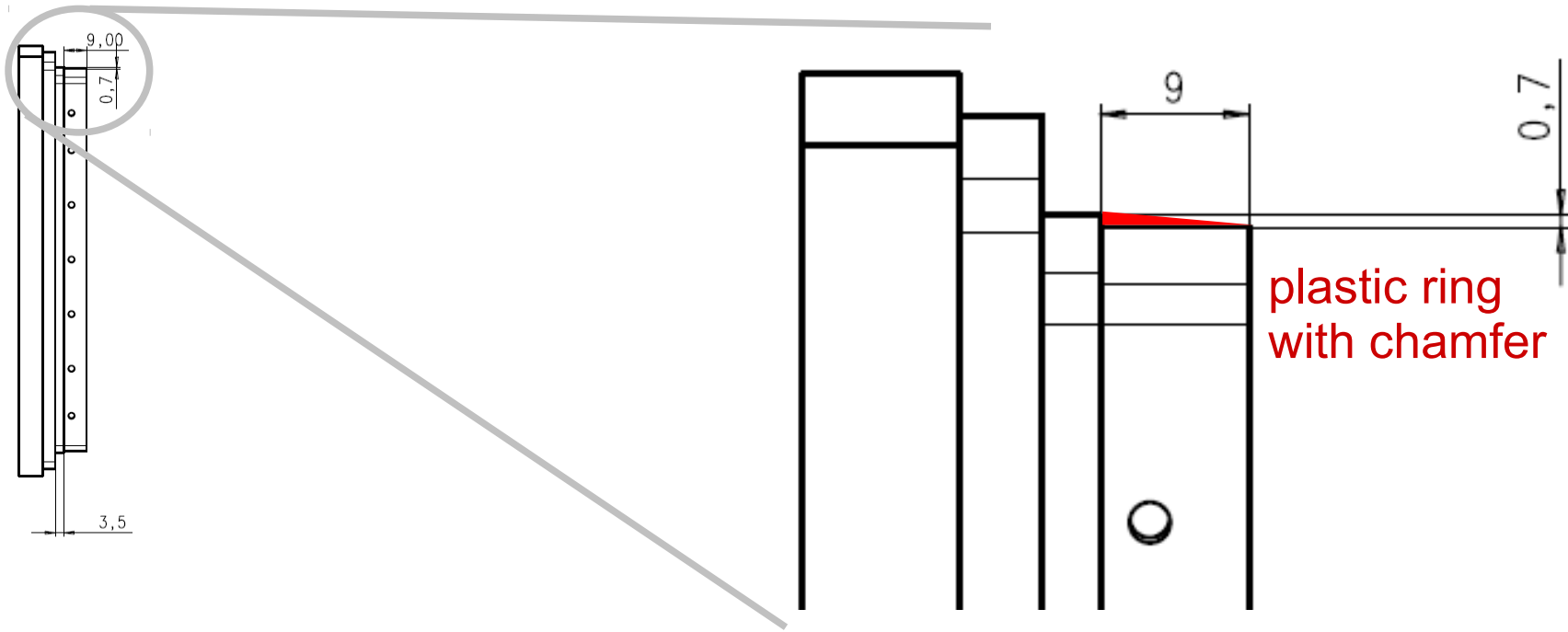
- During rotation of the stage, the vertical position varies up to a bit more than a millimeter
(depends also on measurement position)
- Most measurements (points) stay below half a millimeter vertical deviation

- Probably no direct impact on our usual measurements
(beam spread in PCMAG before TPC is about 5 millimeter in diameter)

- LP modules fit very tight into the endplate (both manufactured with high precision)
- Nearly impossible to align at such precision during insertion
- Abrasive wear during insertion (also: aluminium shavings inside field cage?)
- Proposal: add a thin plastic (teflon, etc.) ring around the module backframe
- Softer material on aluminium → no or less abrasion (+ non conductive)
- Chamfer → easier insertion (module “gets pulled” into right position)



side view



back view

