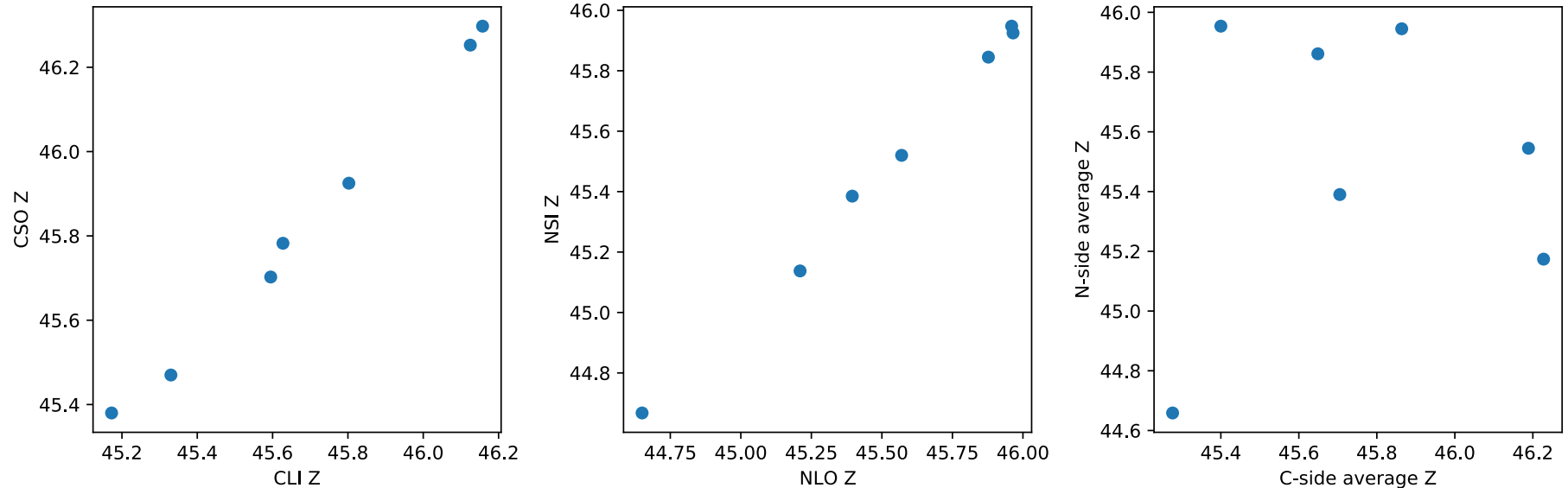


analysis of tile gluing z-positions

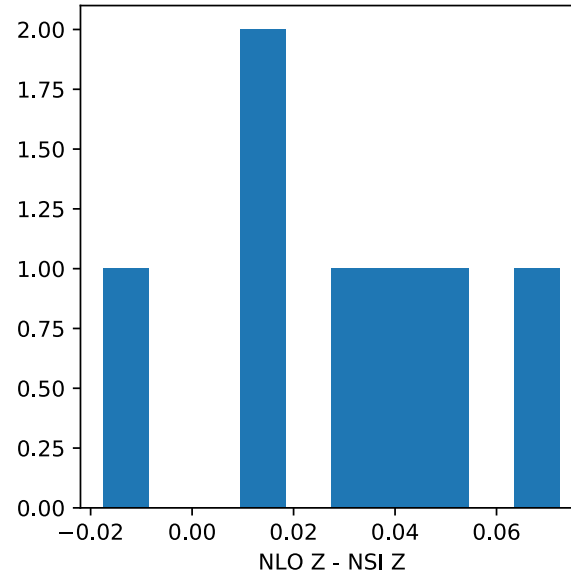
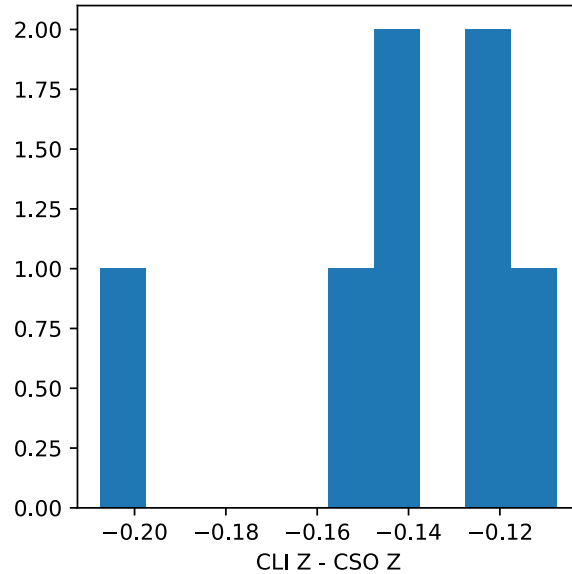
- aim: simplify the z-positioning procedure for tile gluing
- method:
 - use z-positions extracted from gluing script
 - measure average Z, deflections along X and Y, etc

average z-positions measured for different tiles



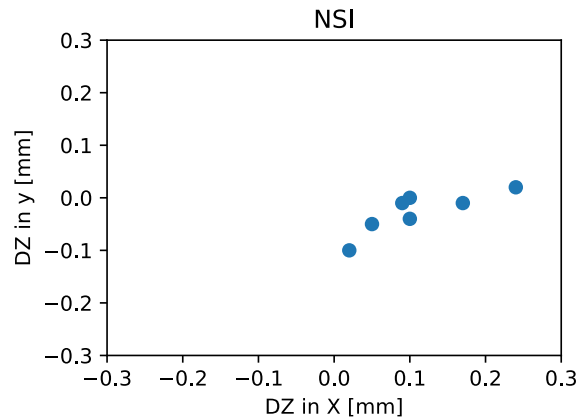
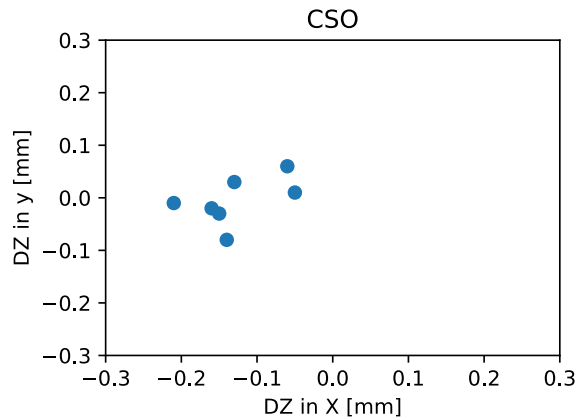
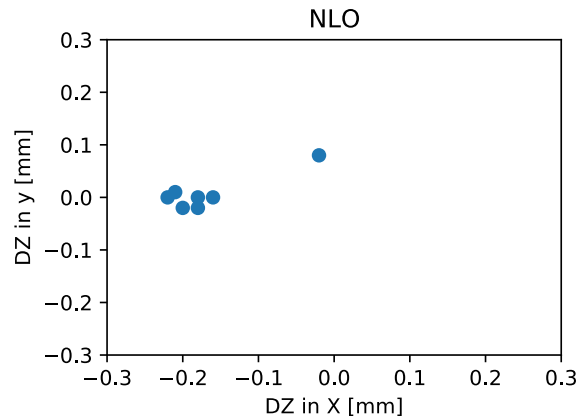
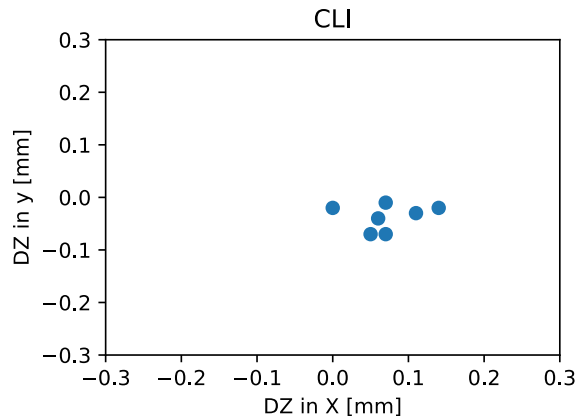
- excellent correlation between two tiles
→ we really see large variations in needle length
- no correlation between N-side and C-side, as expected

difference in average Z between two tiles



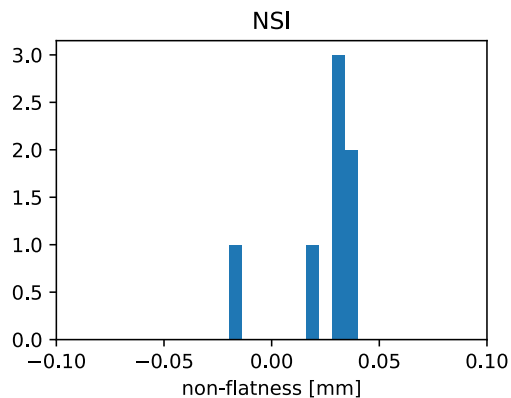
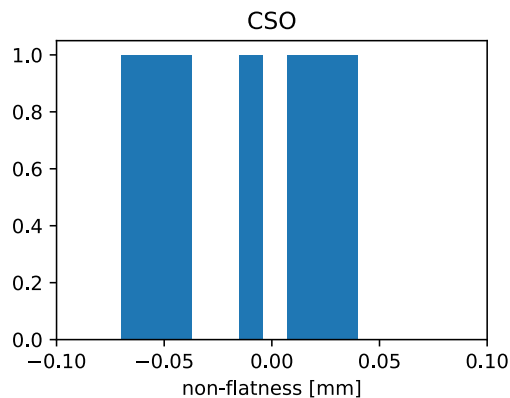
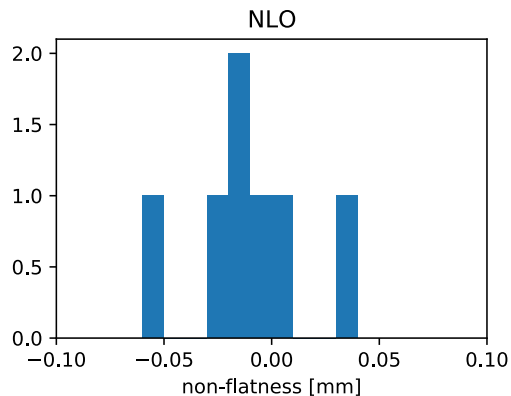
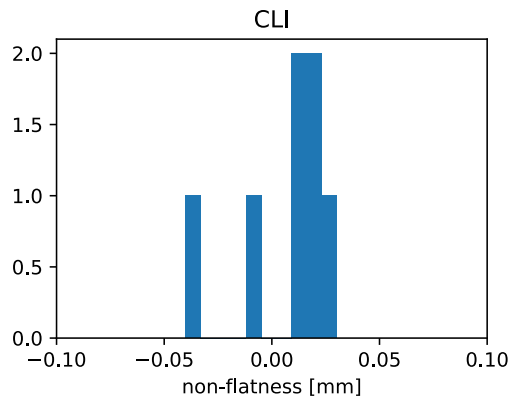
- two tiles on one side not exactly at same Z
- due to difference in pickup block thickness (?)

deflections along long side X and short side Y



- DZ in y = beam – bond
DZ in x = right - left
- NLO and CSO are tilted in x direction
- NSI has large variations:
difficult to believe that these are real

do tiles look flat?



- measure 'warping':
 $(z_{\text{beam_left}} + z_{\text{bond_right}} - z_{\text{beam_right}} - z_{\text{bond_left}})$
- we believe that tiles are flat, so this is a measure for how well we measure

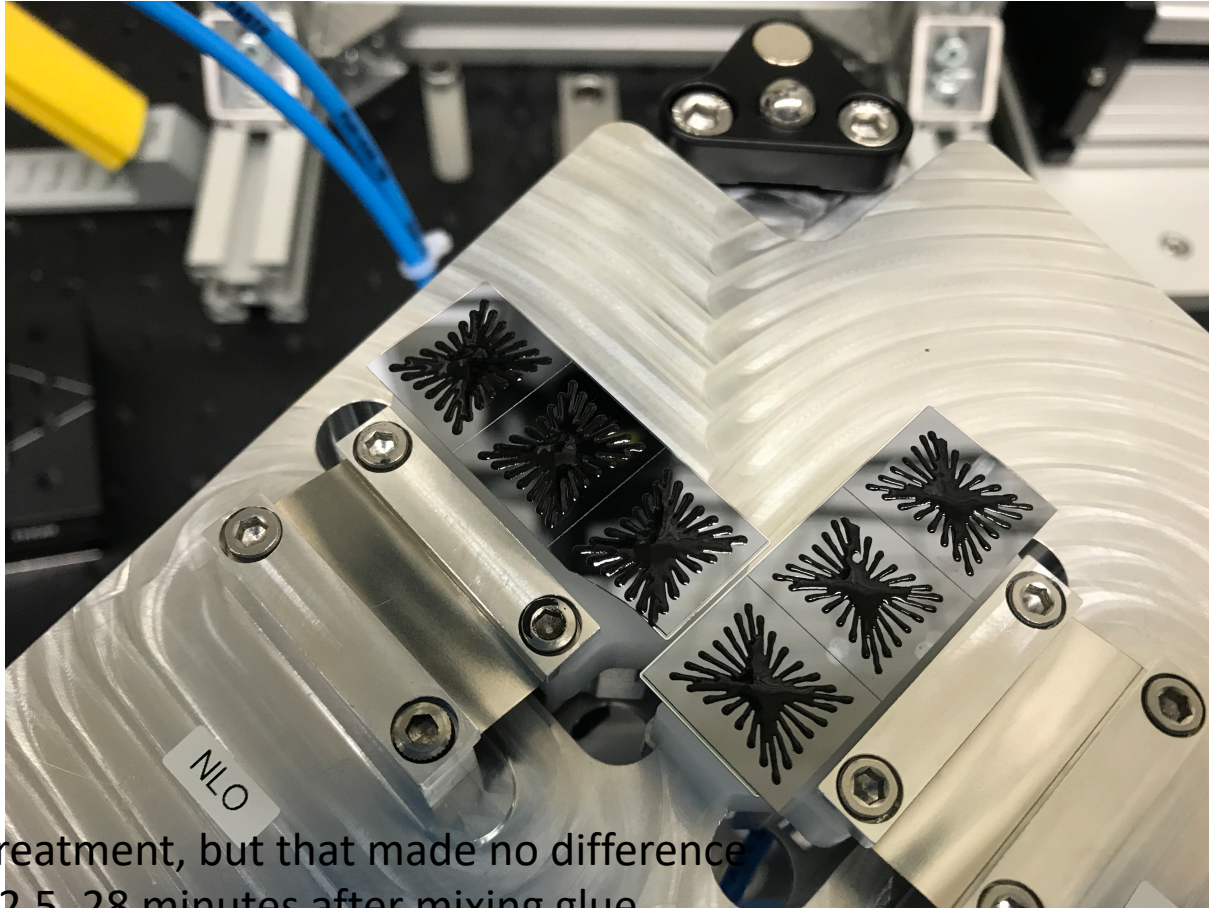
plan

- plan
 - measure deflections of tiles on pickup blocks using the pick and place machine
 - use these in the gluing program
 - for z-positioning, just measure 1 point per tile, right in the middle

glue beading test

- samples (in this order)
 - 3 ASICs plasma cleaned
 - 3 ASICs uncleaned
 - 1 tile plasma cleaned (and isopropanol and xxx)
 - 1 tile not plasma cleaned
 - 2 ASICs plasma cleaned, 1 not cleaned

real tiles



cleaned,
no
beading

uncleaned,
a little
beading?

after heat treatment, but that made no difference
linespeed 12.5, 28 minutes after mixing glue

what went where?