

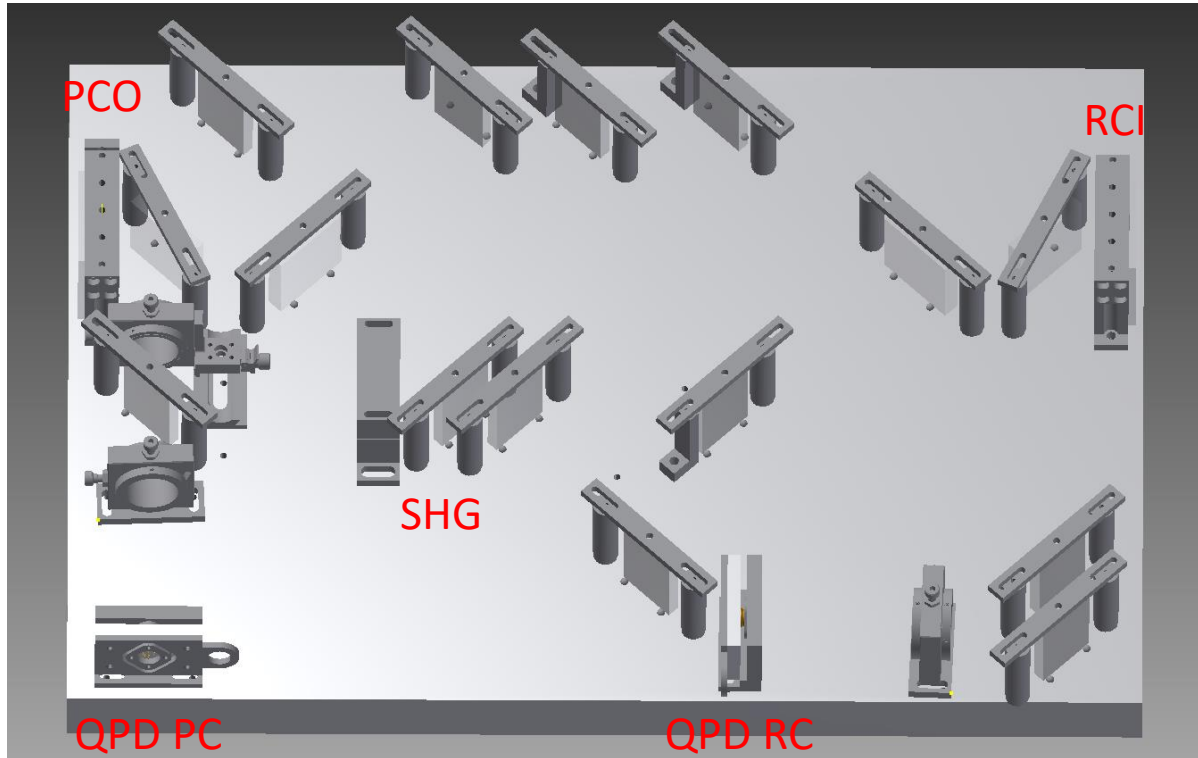


AEI - CBB & Prototype Status

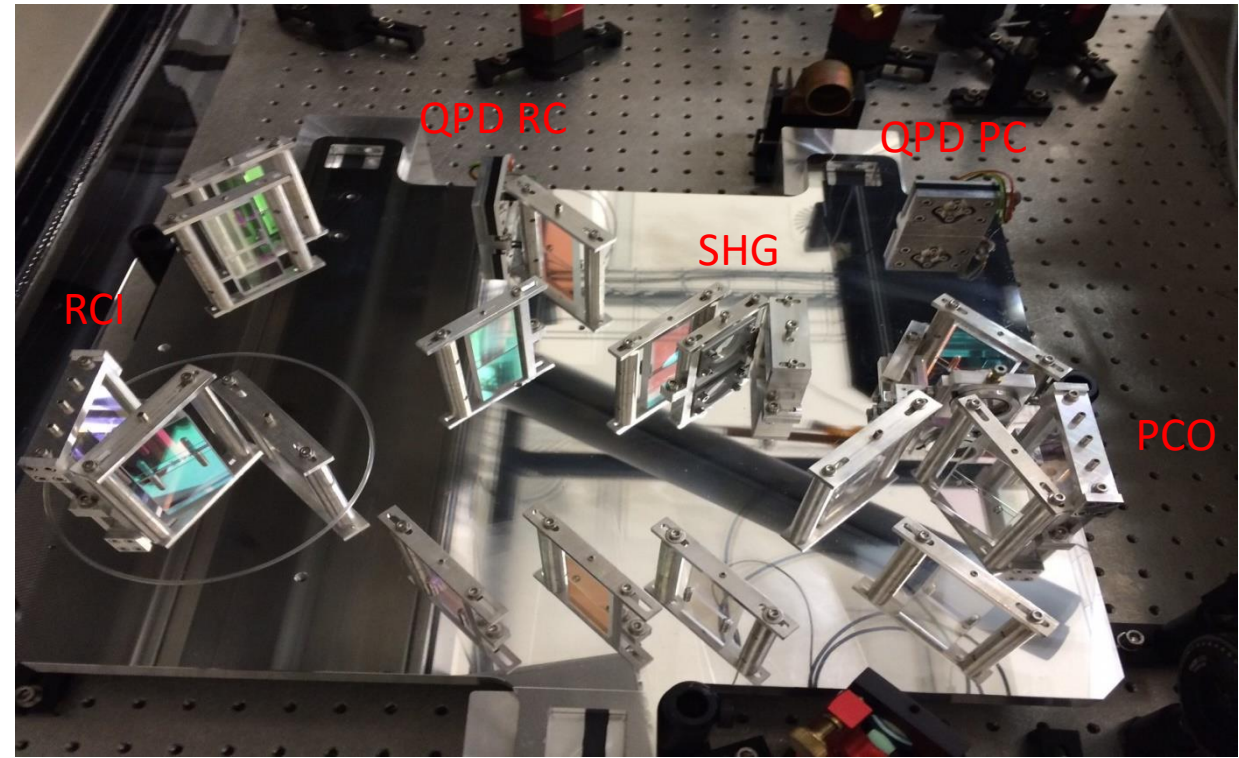
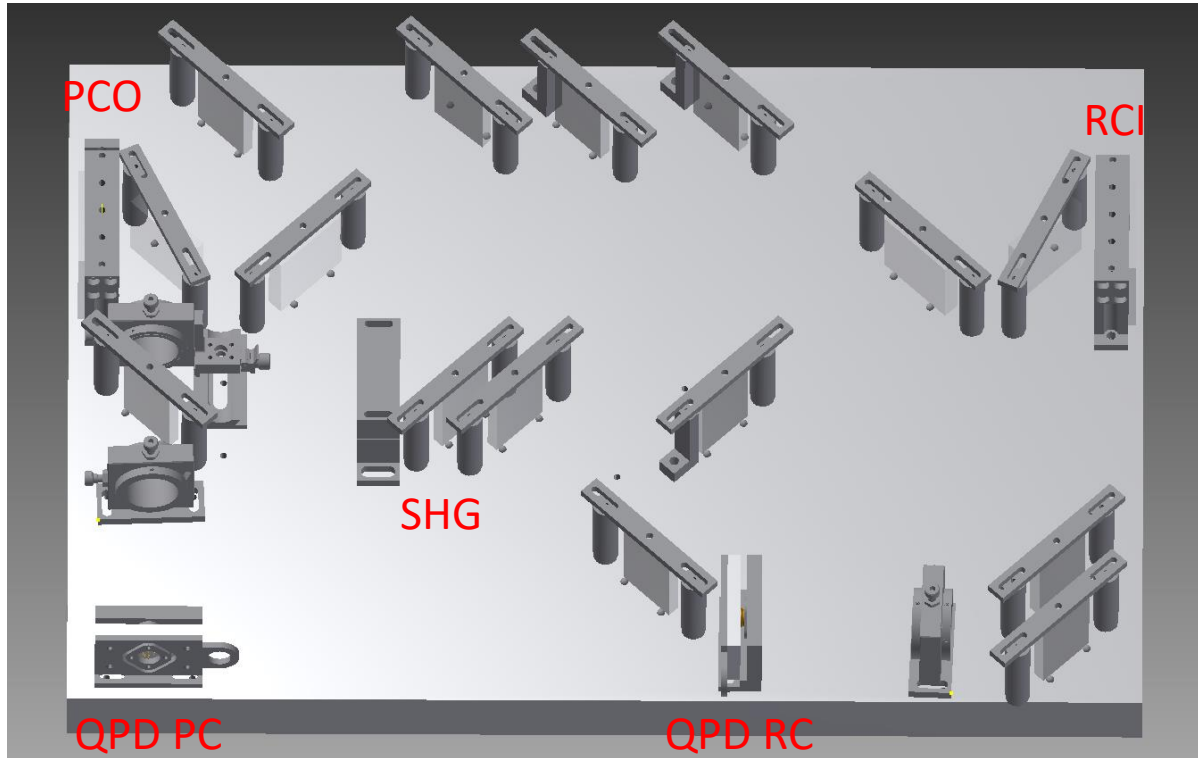
Dennis, Kanioar, Li-Wei



CBB Status

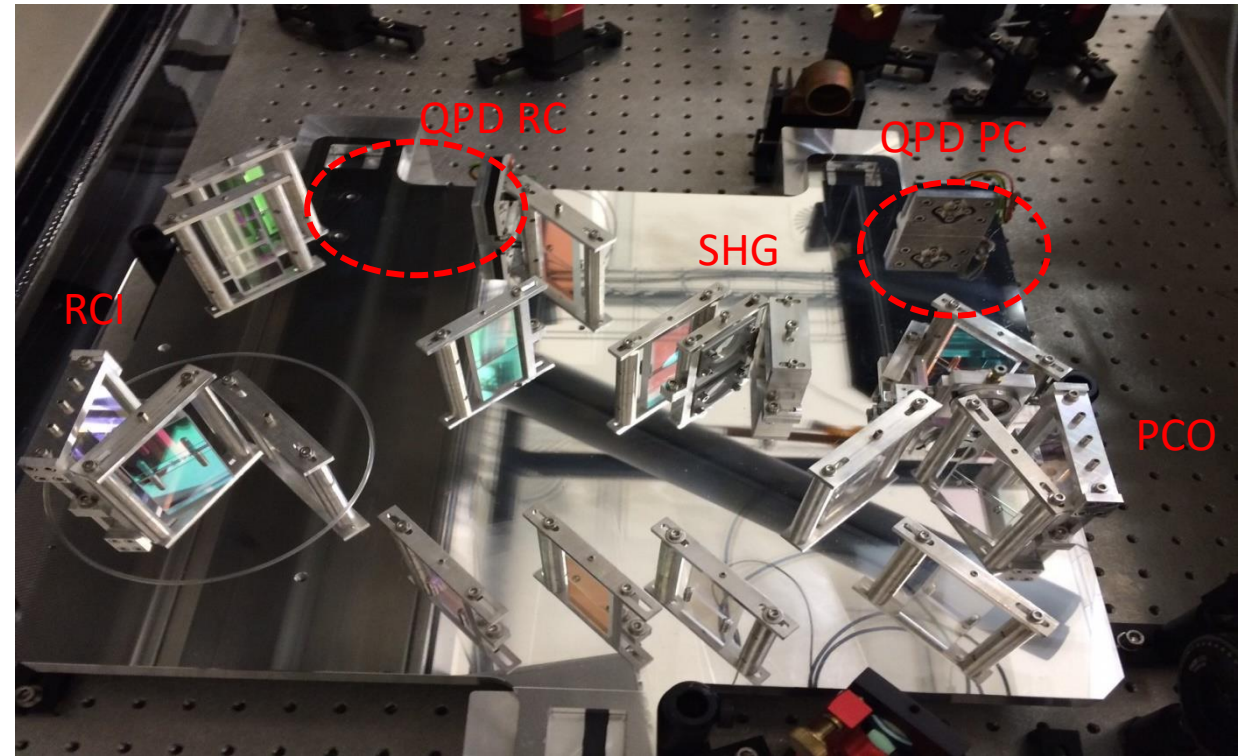
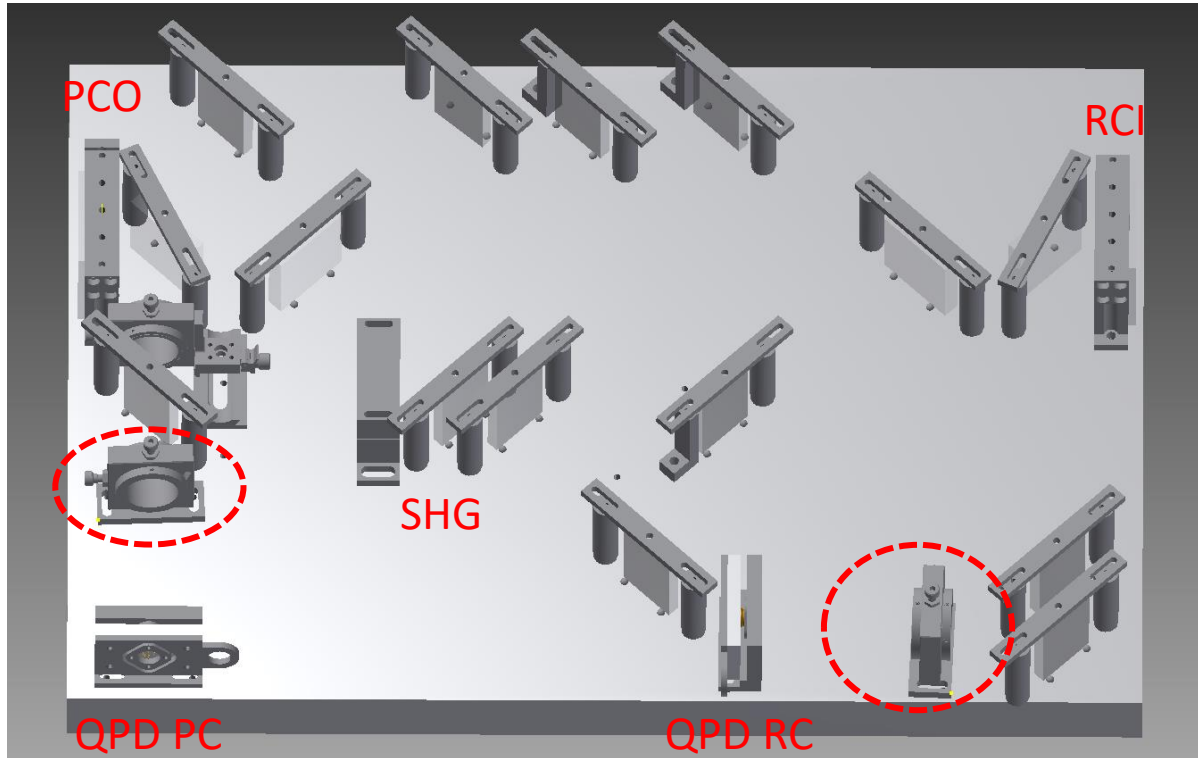


CBB Status



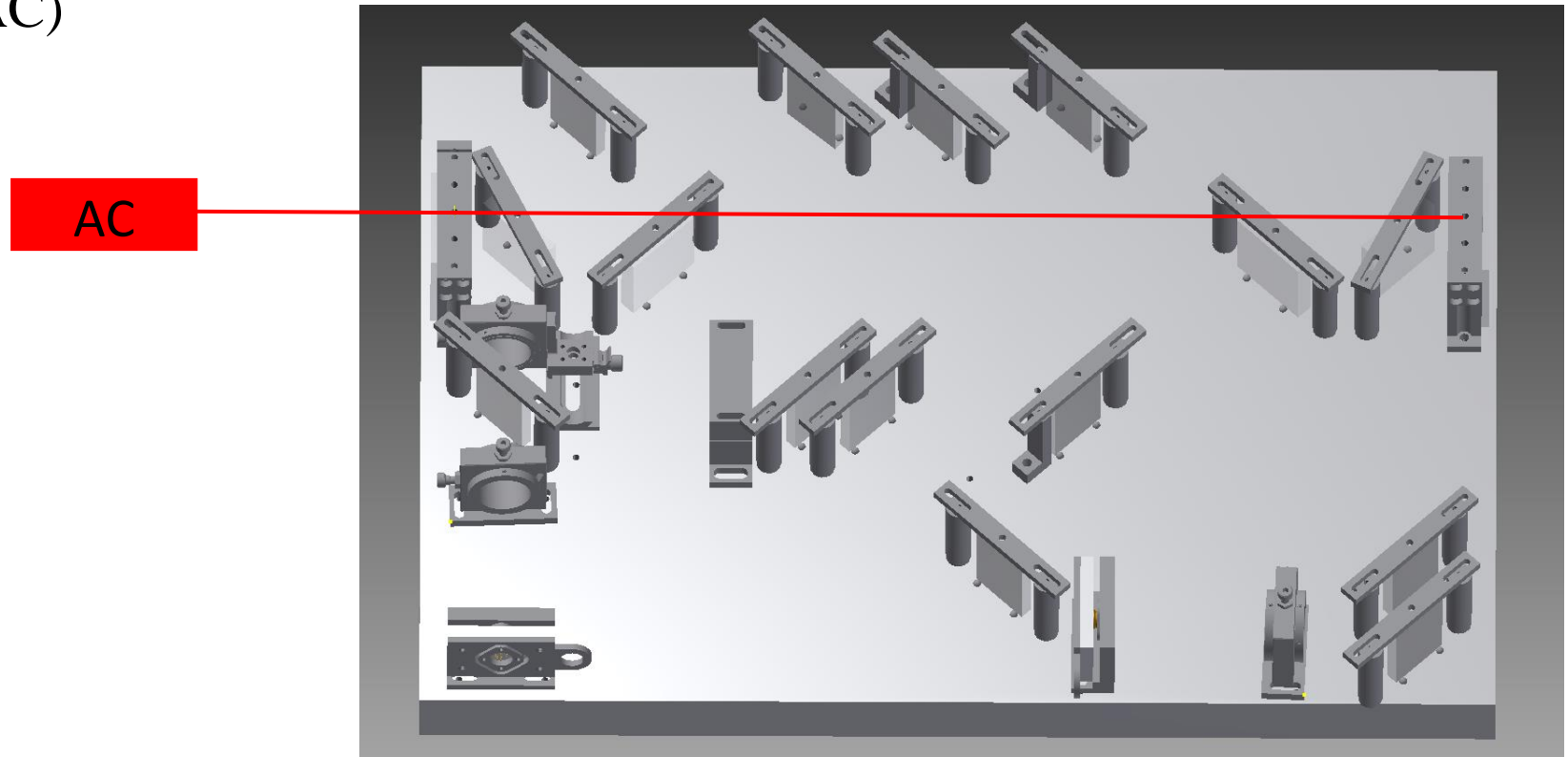


CBB Status



CBB – finale Alignement in HH

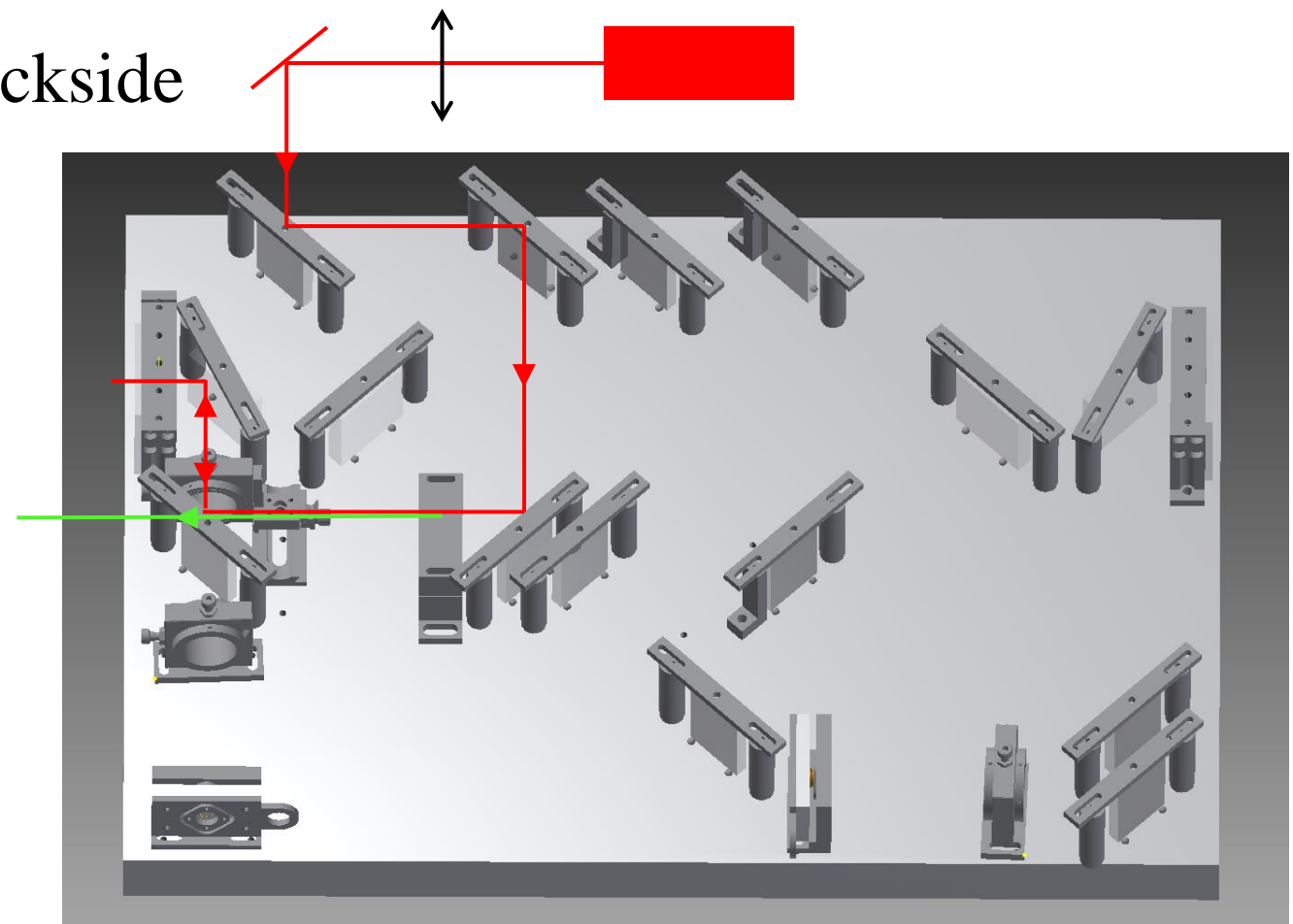
- Check the alignment of PCO and RCI
→ Autocollimator (AC)





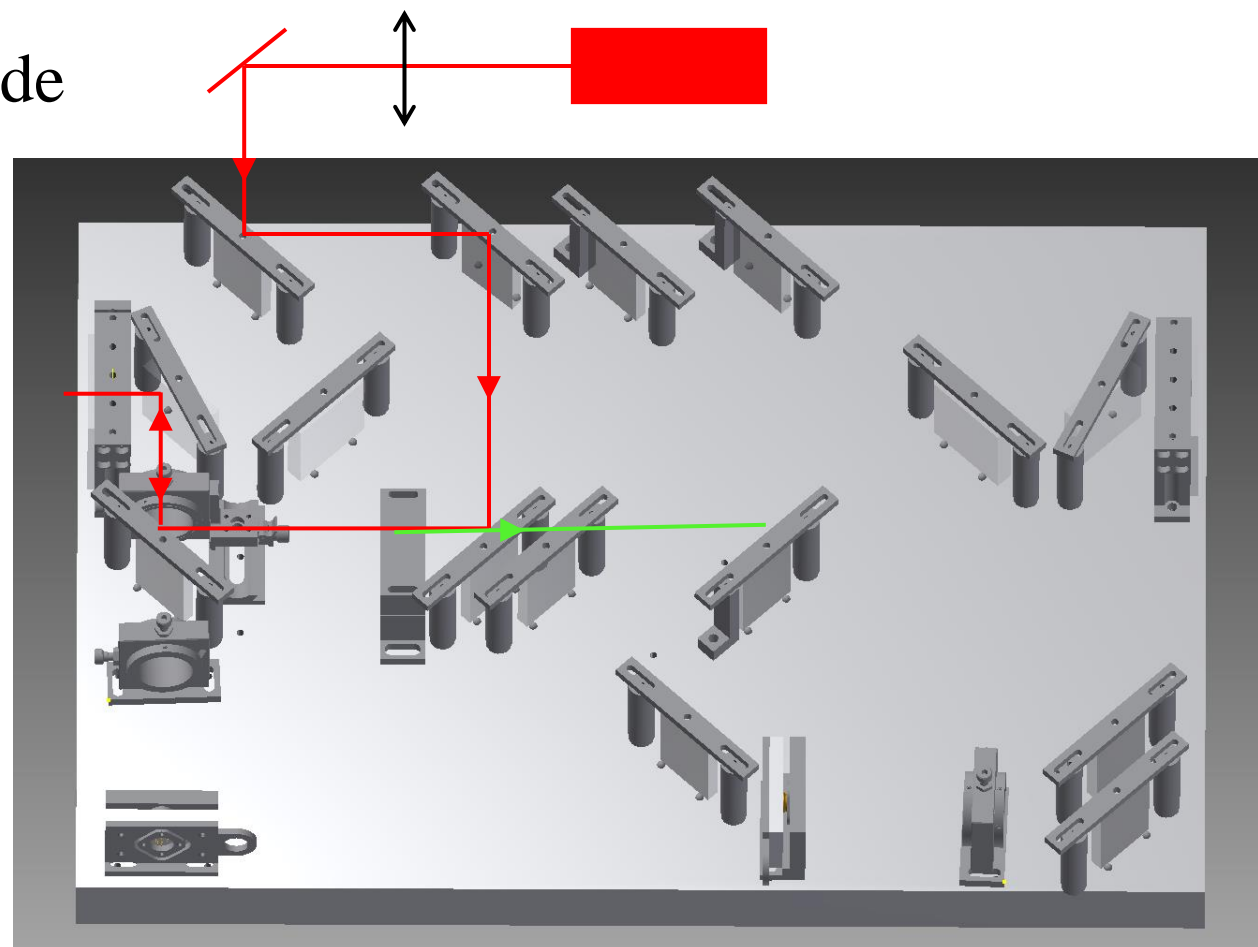
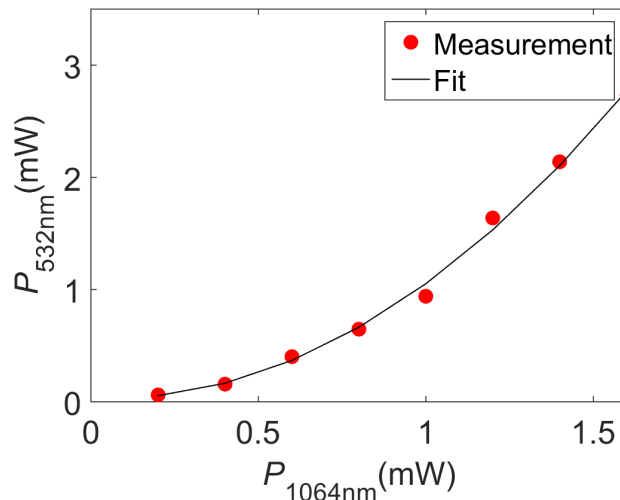
CBB – finale Alignment in HH

- Injection of 500mW from backside



CBB – finale Alignment in HH

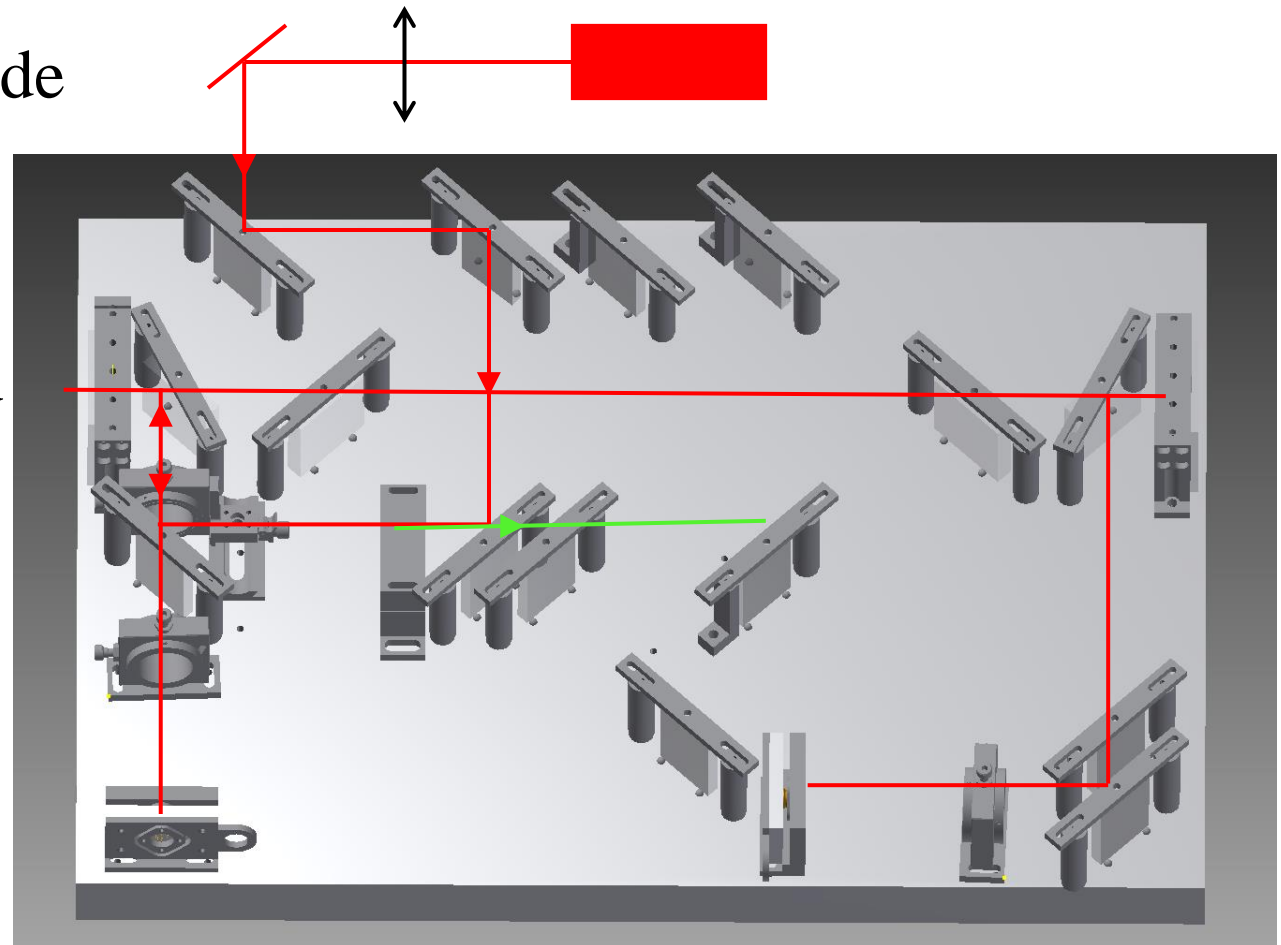
- Injection of 500mW from backside
- Use reflected beam by PCO to optimize SHG





CBB – finale Alignement in HH

- Injection of 500mW from backside
- Use reflected beam by PCO to optimize SHG
- Overlap of reflected and injected beam
- Alignment of QPDs





CBB-Next steps

- Check of QPDs and corresponding electronics
- Installation of QPD lenses
- Rough alignment of QPDs (Double pass through KTP)
- Transfer to Hamburg in last week of October

Prototype

- An empty new lab



- Looking for suitable laser



Perspectives

Repeat Robin's experiment and test the central breadboard

- Not feasible with the exact ALPS-IIa central breadboard
 - Large beam waist ($\omega_{PC} = 1.8$ mm): stability issue with short cavity
 - HR output mirror ($T_{PCO} = 11$ ppm): limited transmission for mismatched cavity
- We start with (and improve) the configuration of Robin
 - $L = 1$ m, FSR = 150 MHz; Finesse ≈ 300 , power buildup ≈ 100 , $T_{PCI} = T_{PCO} = 1\%$

The second breadboard will not be an exact copy of the first

Verify orthogonality/stability with Michelson interferometry, in addition to parallelism with autocollimator

Step-by-step study of power buildup in the regeneration cavity

Design study ongoing (finalizing optical table layout), may incorporate feedback from this meeting to spare the compatibility