

# 2016-08-22 ACHIP Meeting

## Participants:

Marco Calvi, Albert Romann, Eugenio Ferrari, Marie Siegler, Franziska Frei, Nicole Hiller, Yelong Wei, Cigdem Oszkhan

## > Detection setup update (Marie)

Presentation on Camera Calibration (see slides)

- The performance of 2x, 10x and 20x microscope objectives, together with 200 mm lenses, were investigated for three different cameras.
- Conclusion: 10x Microscope objective performs best, “fat Nikon” objective lets us benefit of larger field of view when using PCO Edge camera with big sensor size. Otherwise also the Basler ACA1400 performs nicely.

## > Status of permanent magnet quadrupoles (Marco)

The design of permanent magnet quadrupoles was presented in details (see slides). It is possible to have 500 T/m field gradient with an aperture of 5 mm in a 10 x 10 x 10 cm package, weighing about 10 kg.

- *Important: Make sure to pick a vacuum chamber stainless steel material like 316 (maybe 316L if we want to be a bit more cautious) to avoid magnetization problems.*
- Indicative cost for all 6 quadrupoles ~ 30k CHF.
- Questions:
  - Can someone do FLUKA calculations to see how much radiation we'd generate by the magnet aperture?
  - for Sven: How little should the field for the beam be when we move the magnets out?
  - for Eduard: Is it ok if all the magnets are the same and you just tilt them when mounting to achieve focusing and defocusing?
  - Is it enough to measure the integrated field of the magnet or do we need to measure differently in order to map the gradient in more detail?