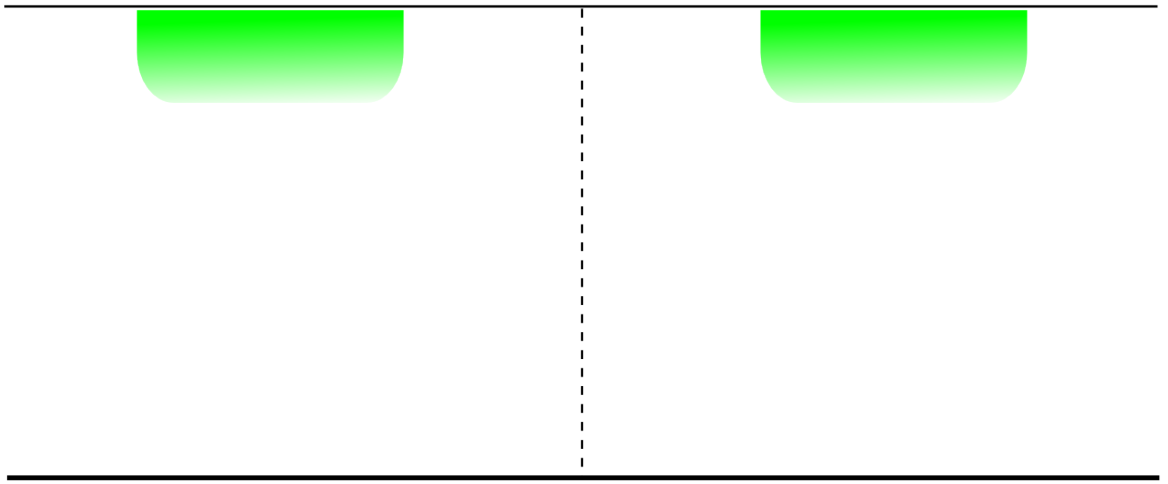
“Eta” correction of systematic measurement bias

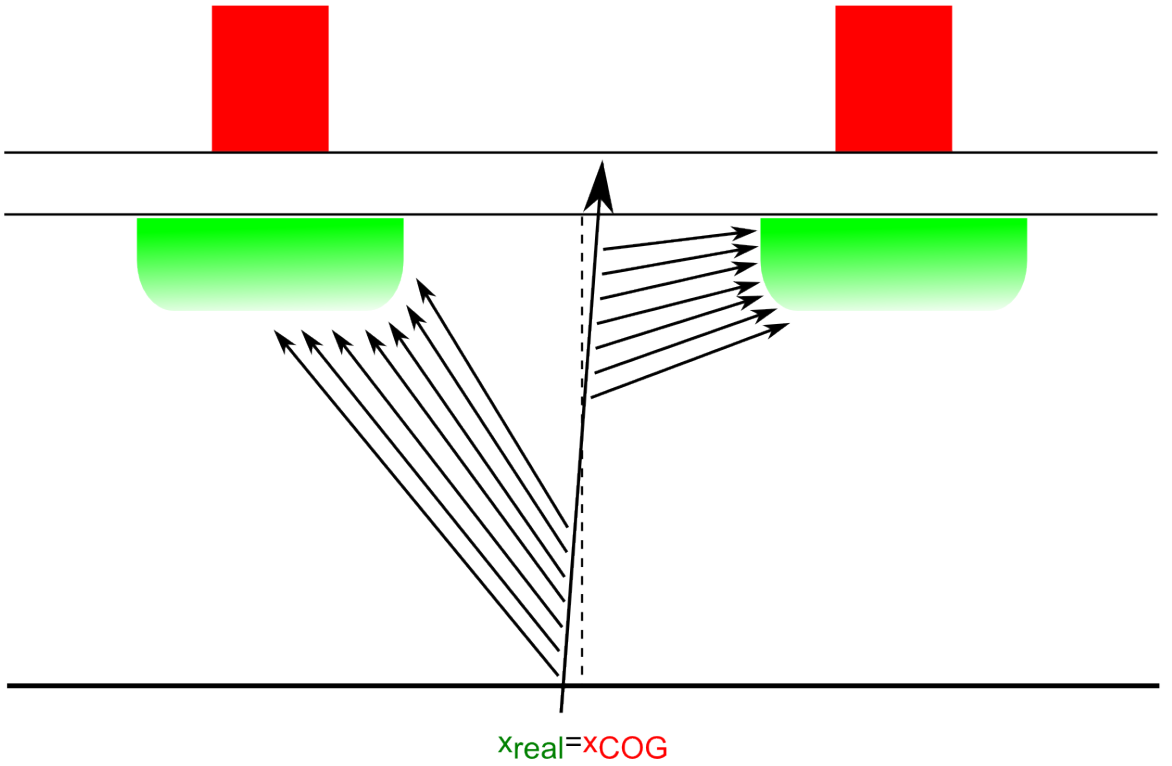
Manfred Valentan

MPP Munich

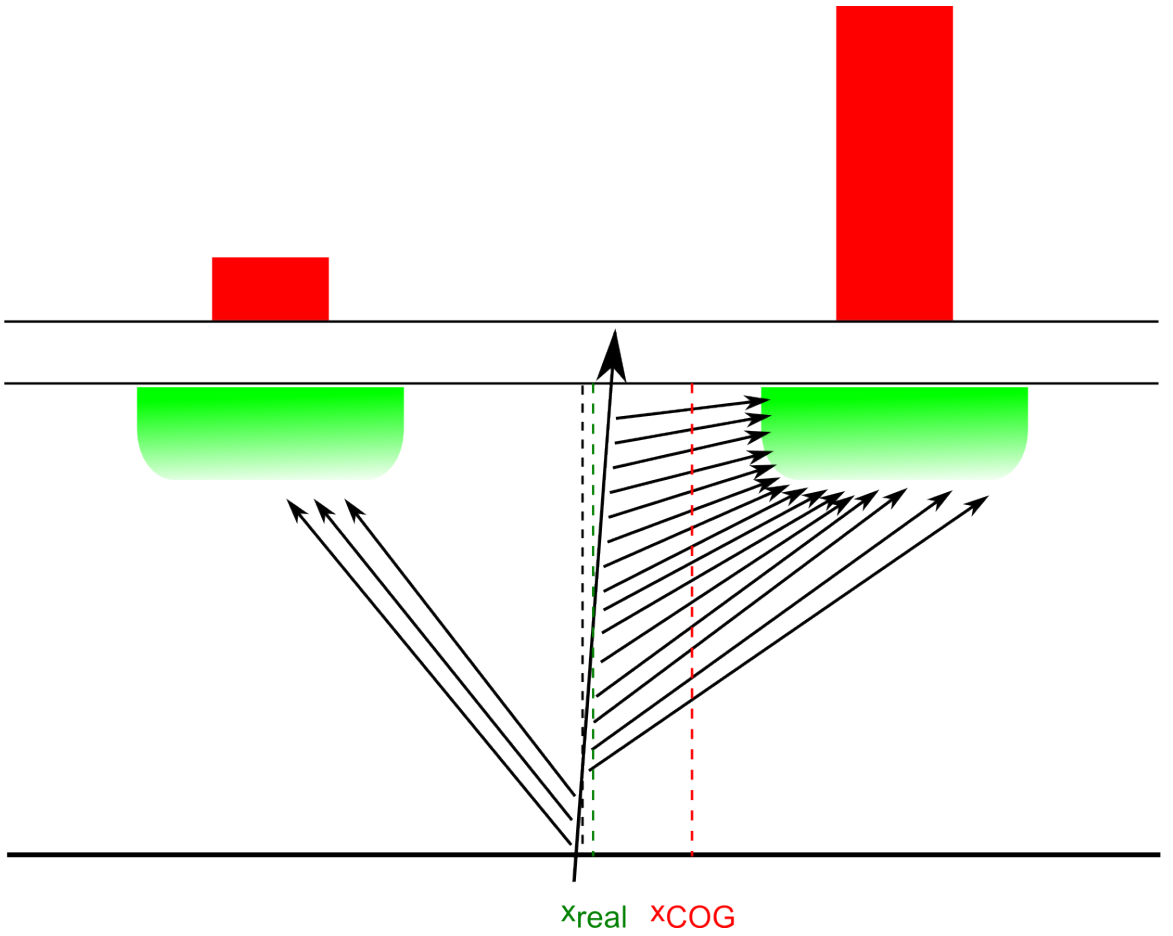
Nonlinear charge collection



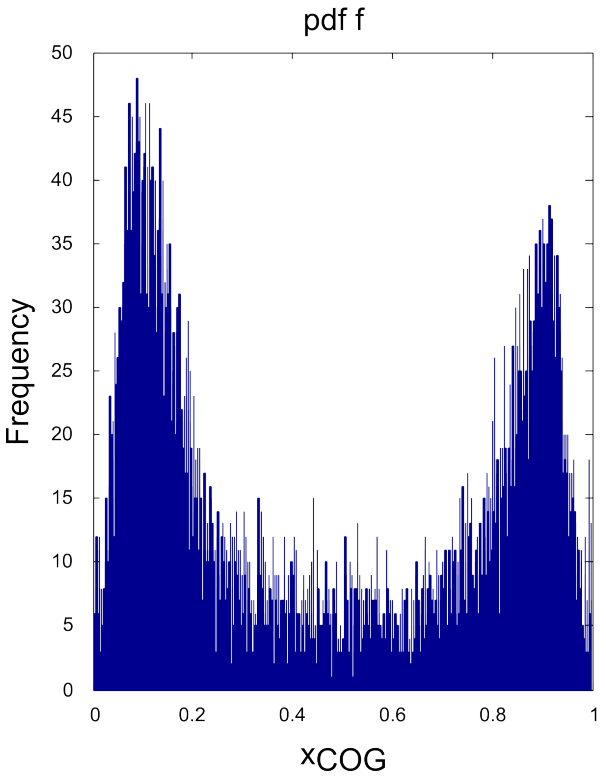
Nonlinear charge collection

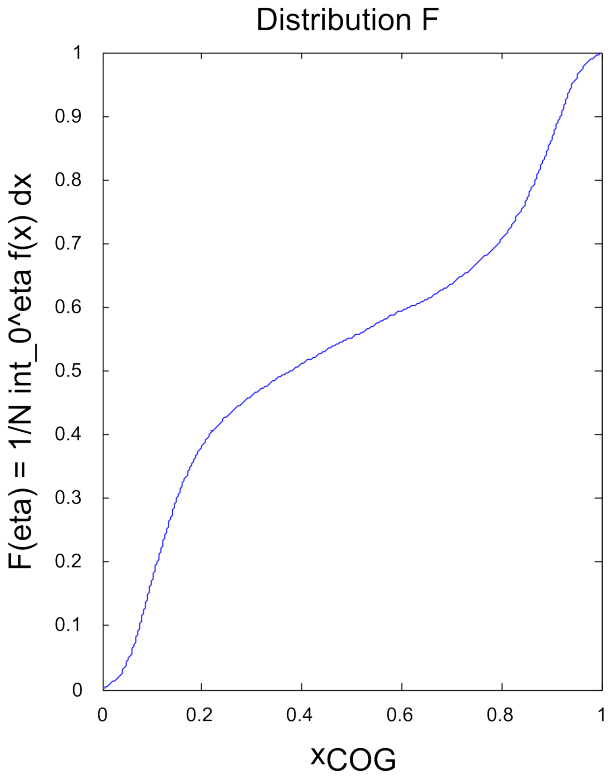


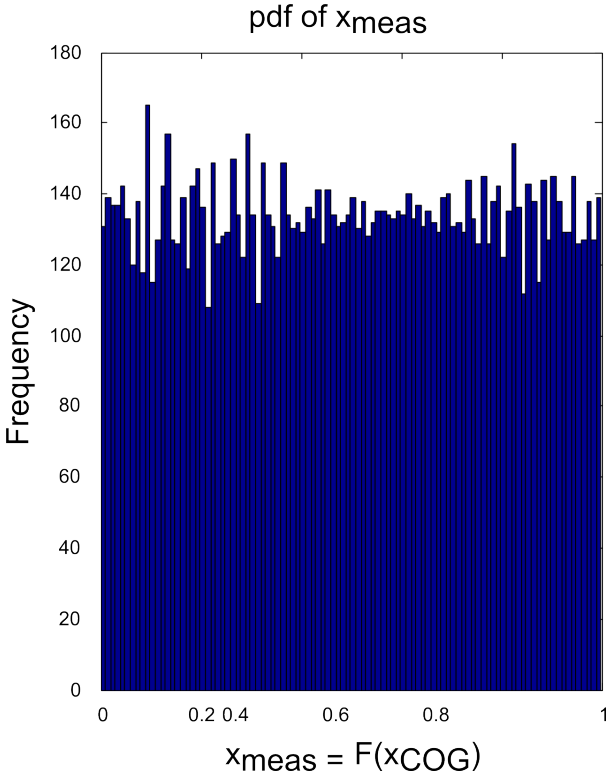
Nonlinear charge collection



Eta (=x_{COG}) correction







Where does this fit in?

- After track finding, before track fitting
  - On the level of digits
- Need impact angle information
  - From track finding and geometry
- Store correction data
  - Addition to alignment or calibration?

What is the benefit? (Assumptions)

- More reliability for single tracks
  - Not only statistical average
- Improved vertexing
  - Without it measurements can be pitch/3 off
- Changes e.g. impact parameter distribution
  - More realistic
- Improved fit quality
  - Data better matches model → better Chi2 prob.

What I need

- Realistic digitizers
  - Both DEPFET sensors and DSSDs
- Directions and tipps
  - How to interface to alignment runs to calculate the correction data
  - How to store the correction data
  - Where to apply the correction
    - Addition after track finding? Addition before track fitting? Standalone?
- What do you think?