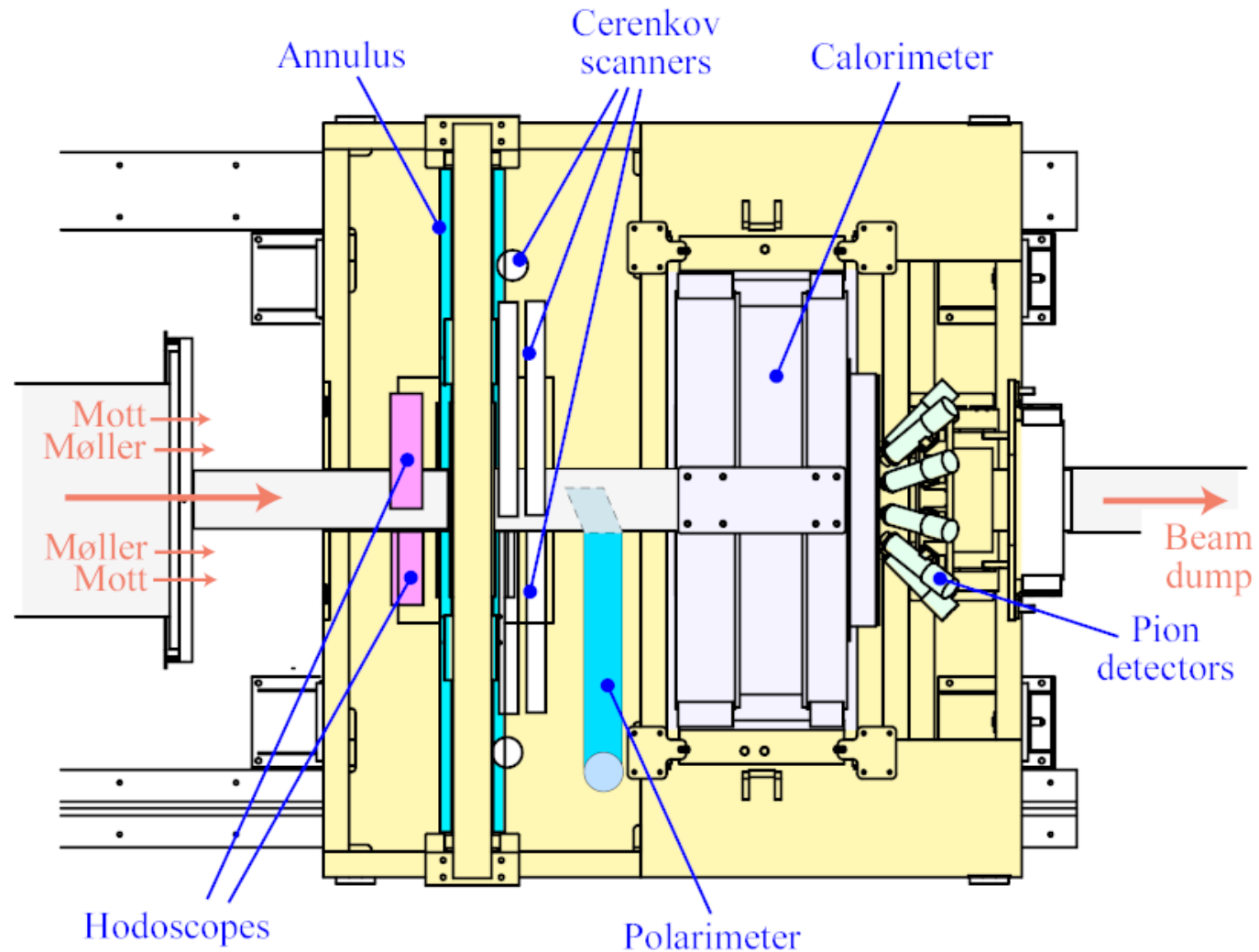
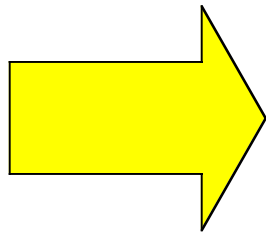


Monitoring of scattered beam in SLAC E158

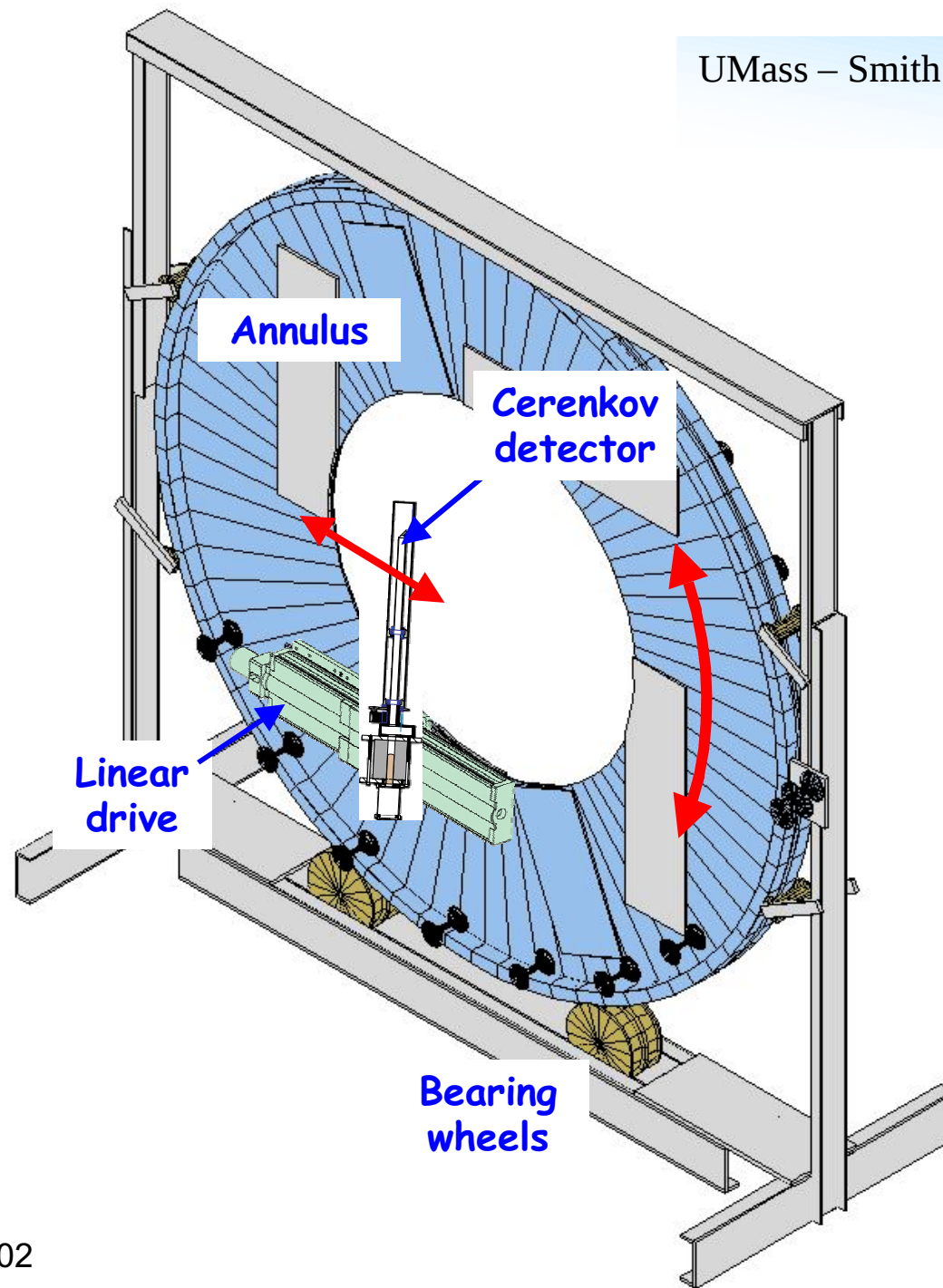


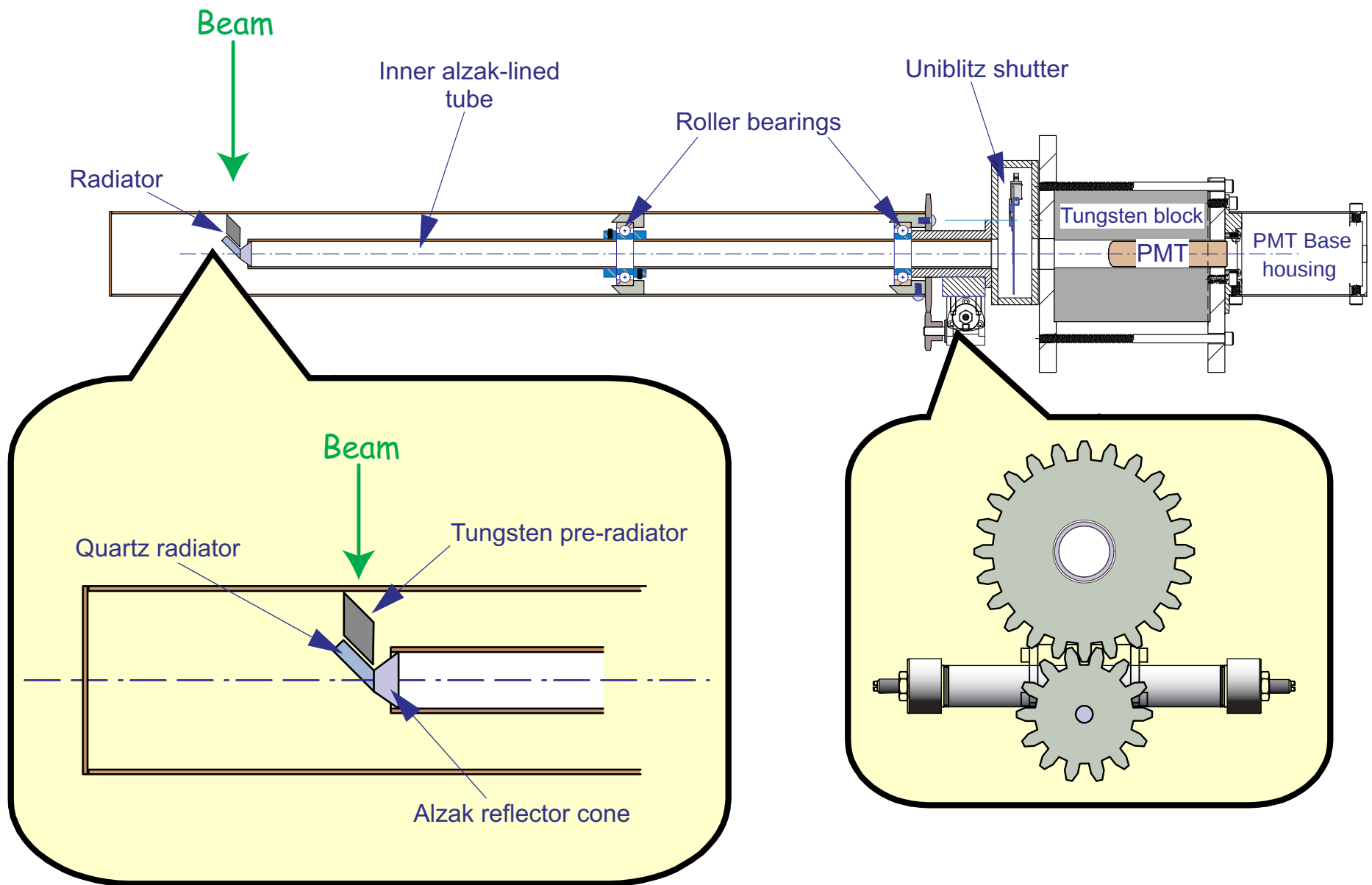
Requirements

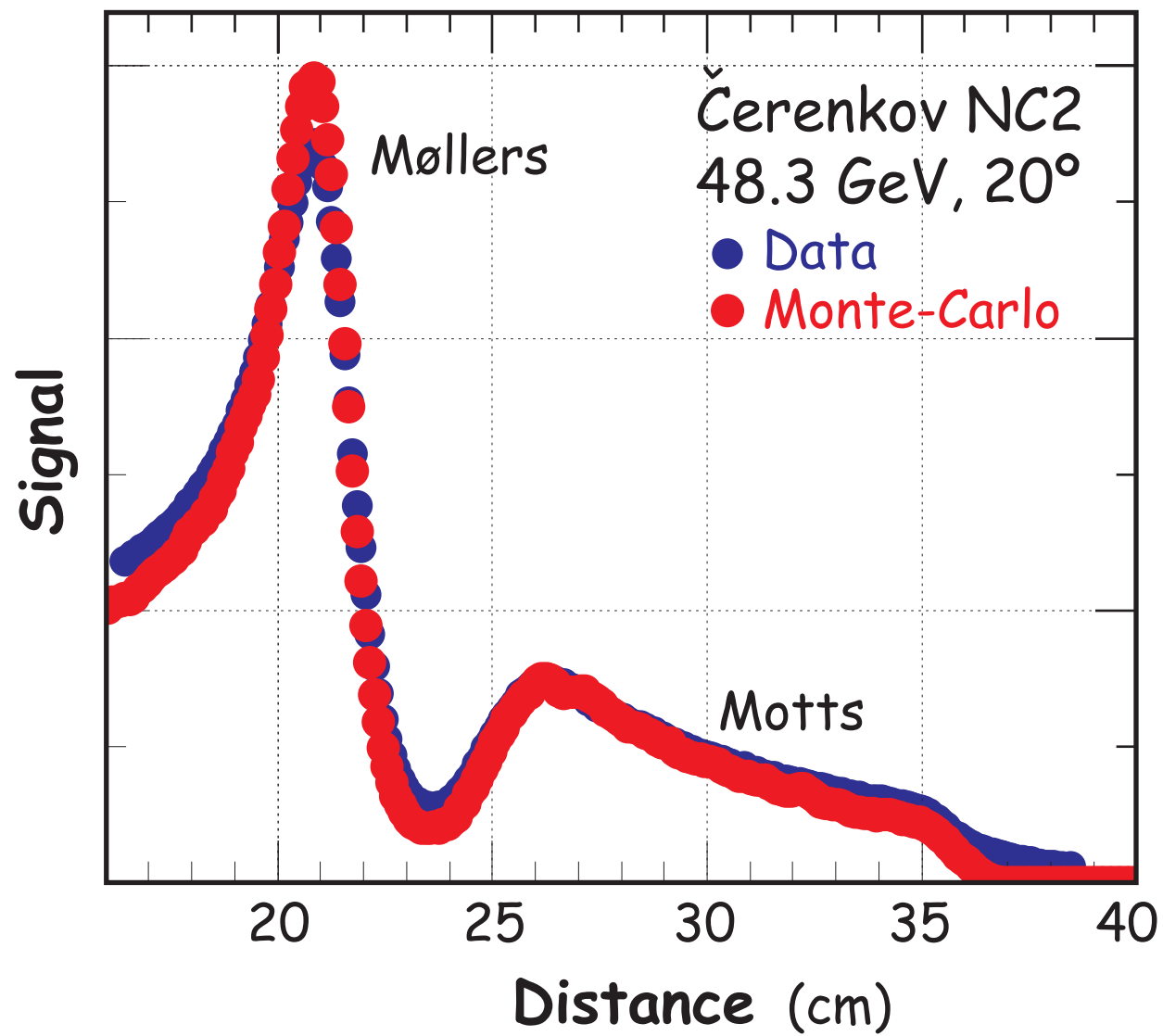
- ⇒ Able to measure the full spatial profile of scattered beam.
- ⇒ No cross-calibration of responses of different detectors.
- ⇒ Spatial resolution of $\approx 10 \times 10 \text{ mm}^2$
- ⇒ Results reliable, even at the highest luminosities.
- ⇒ Do not obstruct the beam during production running.
- ⇒ Radiation-hard.



Scanning detector







Application in HAPPEX II

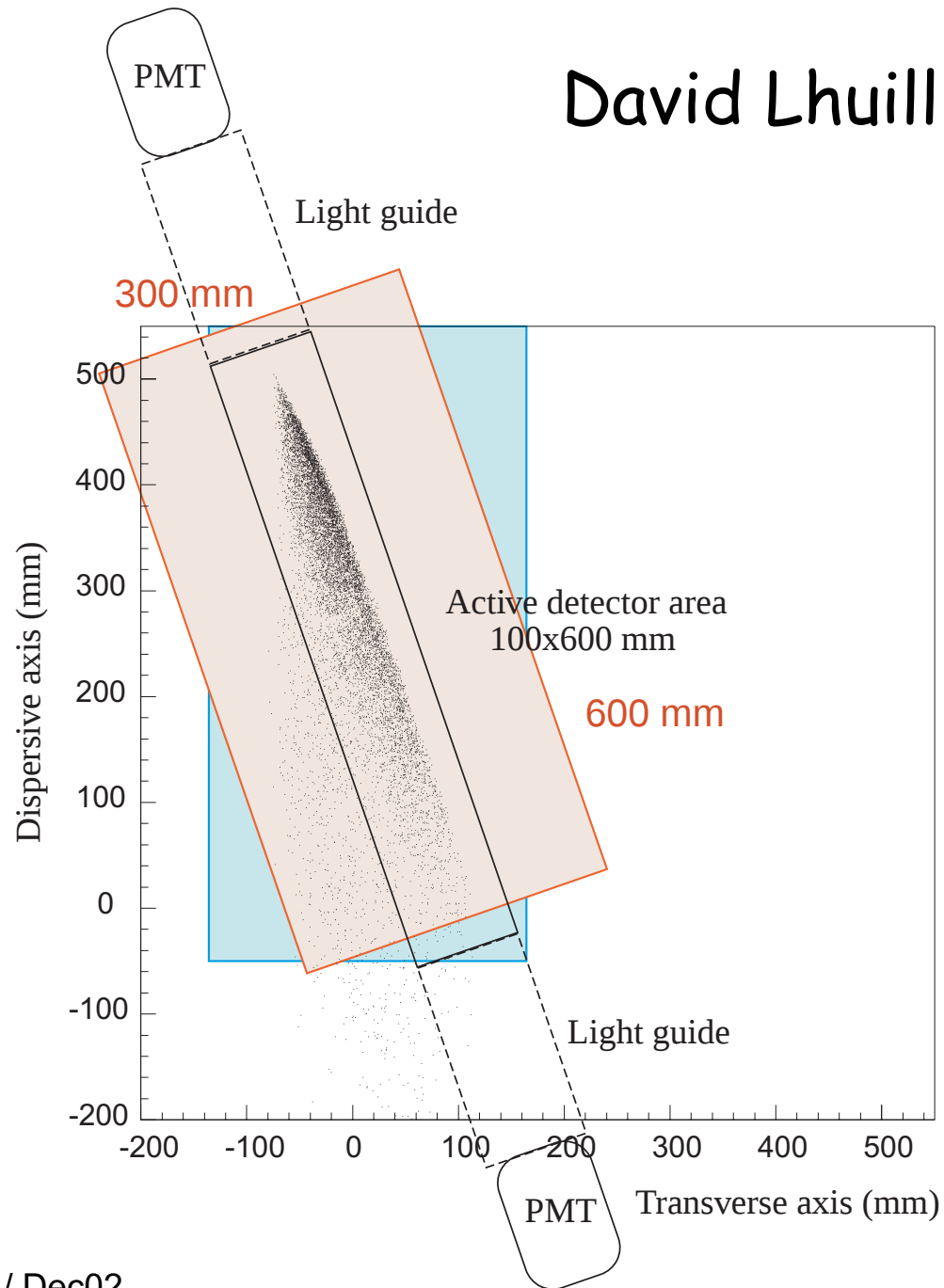
Similar need to scan intense scattered beam

⇒ Reliability of drift chambers unproven at high rates .

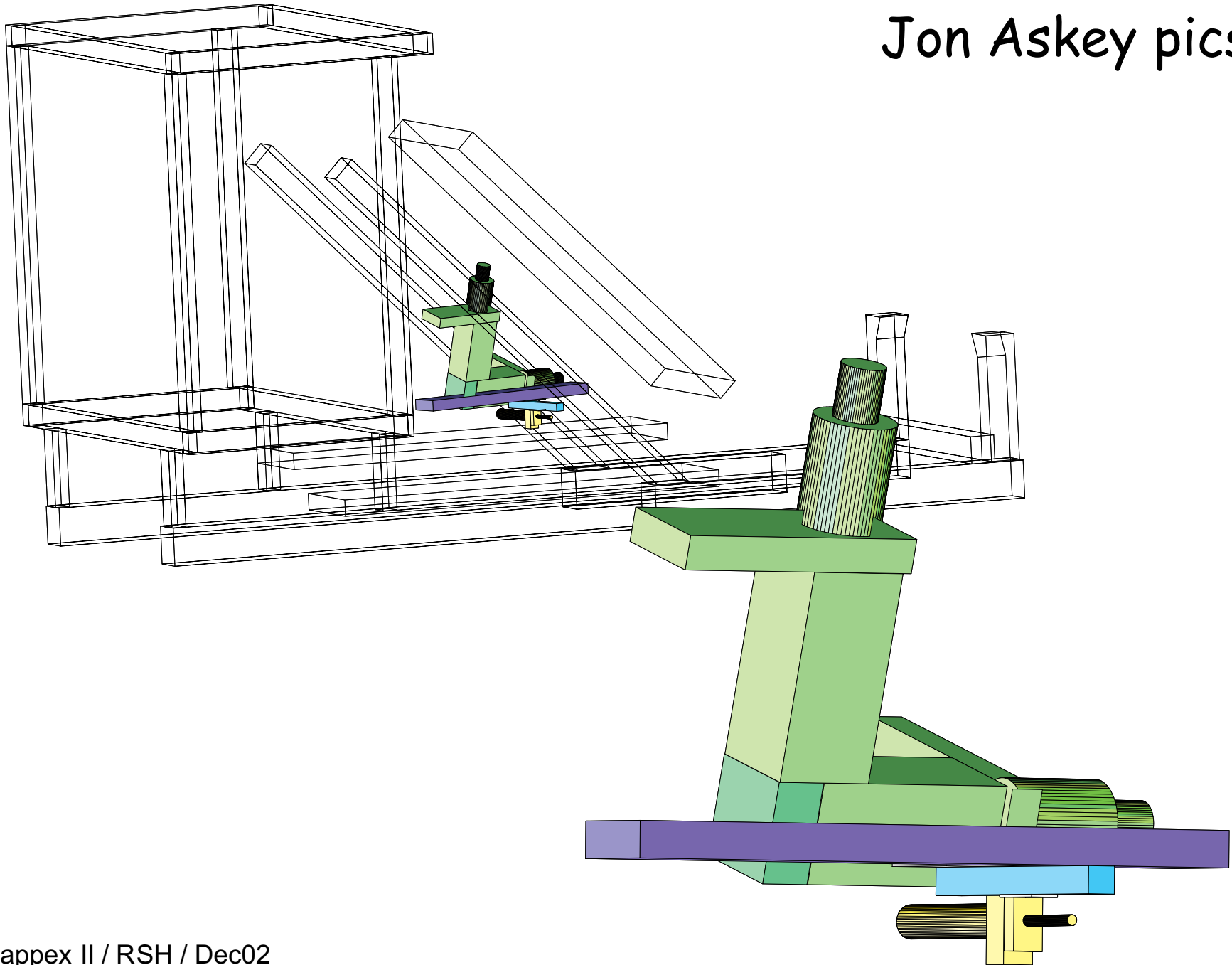
Cleaner environment than E158.

⇒ Need for moveable preradiator and shutter?

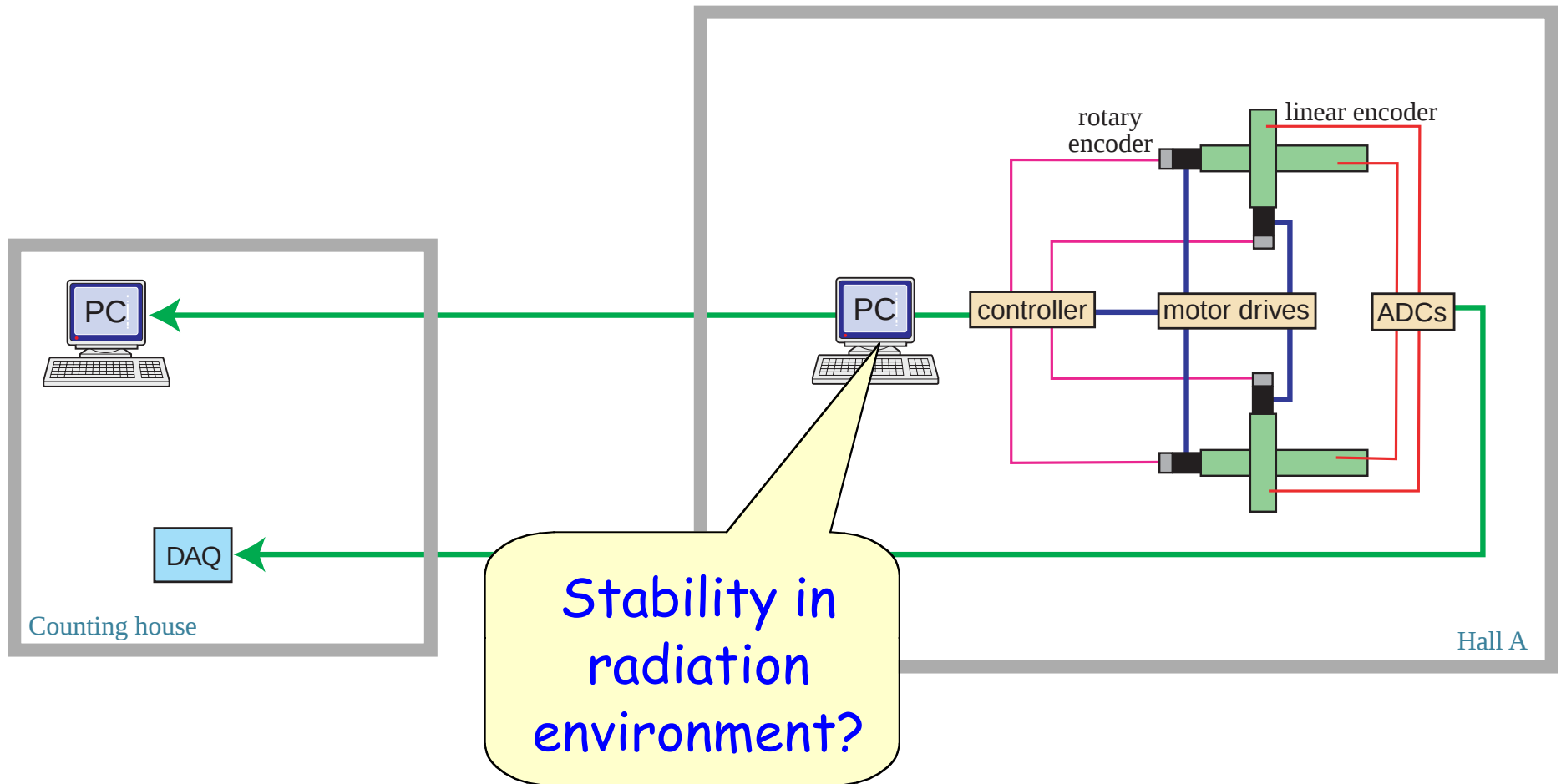
David Lhuillier simulations



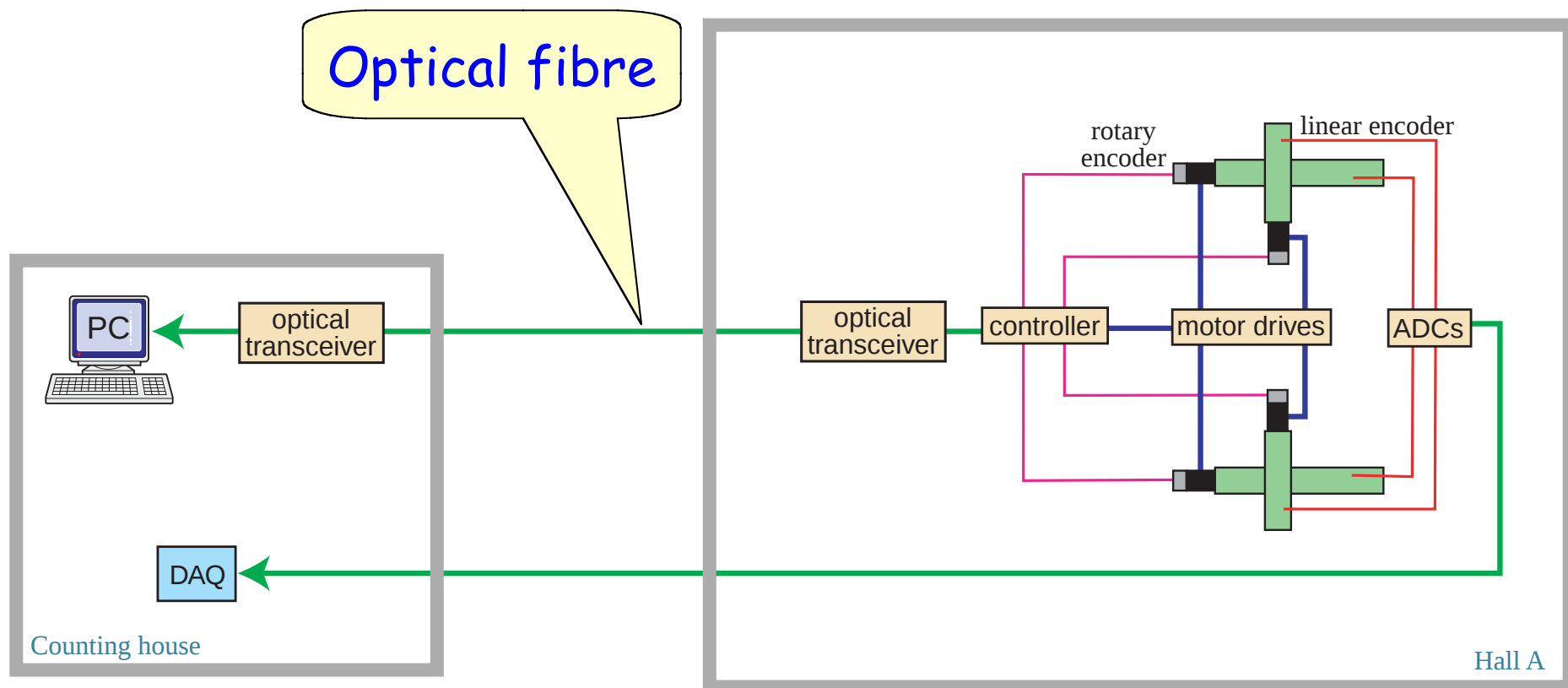
Jon Askey pics



Motion control



Motion control



Budget

Base model: (incl. 2 drive systems and detectors) \$23k
(Drive systems cost \$18k)

Extras:

Shutters + controller \$2k

Rotating tungsten preradiator \$1k

Fiberoptic transceivers \$2k

\$28k

Excluded: 2 Pentium 2 PCs with Firewire ports, basic cables,
compressed air supply lines & controller box, DAC
electronics, installation costs, ...

Manpower

UMass: RSH, KK, Lisa Kaufman, Kent Pashke, undergrad student (Jon Askey), Machinist

Smith: Piotr Decowski, undergrad?

JLab: Cabling, installation, controls, LabView support

Timeline

Procurement:

Start next week. Parts delivery up to 2 months

Design:

Completed by Spring break

Fabrication:

Spring semester

LabView development:

Spring semester

Installation, testing:

June 2003