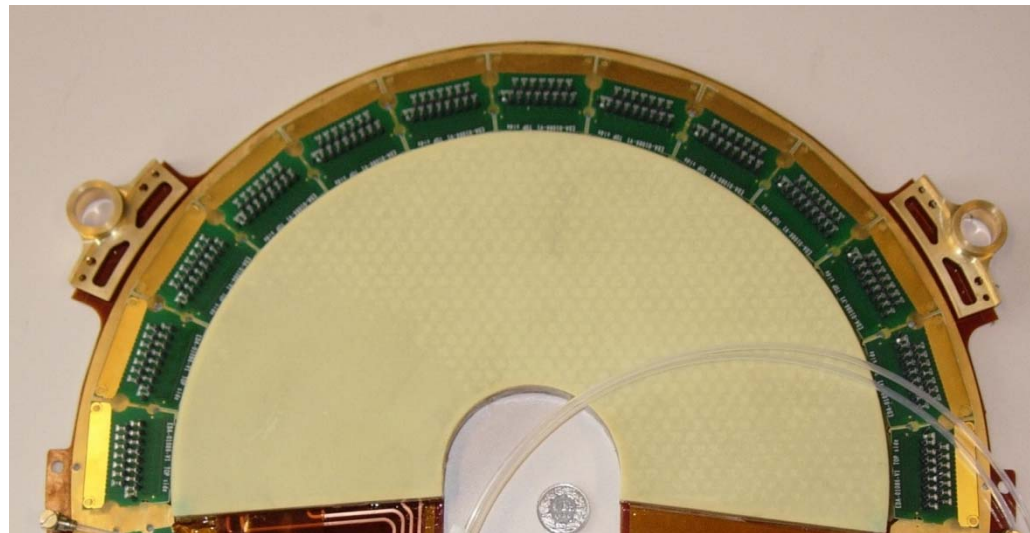


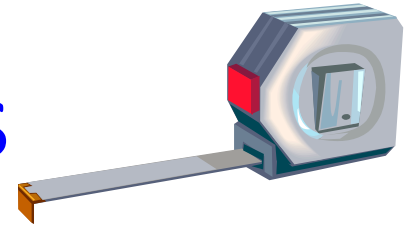
Survey of Detector Dimensions



Aim of survey

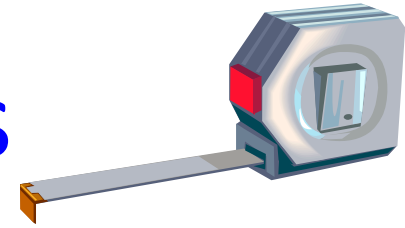
- Confirm requirements of detector designs
- Establish a basis for CERN workshop upgrade
- Get an idea of potential industrial production

CERN workshop capabilities



- Present dimension
 - Can be or has been done today
- Future dimension
 - Technology available
 - But not available in workshop, needs investment

CERN workshop capabilities



detector type	present dimensions	future dimensions
	cm * cm	cm * cm
GEM	40 * 40	50 * 50
GEM, single mask	70 * 40	120 * 50
THGEM	70 * 50	200 * 100
RTHGEM, serial graphics	20 * 10	100 * 50
RTHGEM, Kapton	50 * 50	200 * 100
Micromegas, bulk	150 * 50	200 * 100
Micromegas, microbulk	10 * 10	30 * 30
MHSP (Micro-Hole and Strip Plate)	3*3	10*10

Summary information

- 15 answers (2 as e-mail)
 - Covering all detector types
 - Some confusion because of bad questioning
 - Most groups work on prototypes
 - Few ‘real’ detectors built
 - Some groups work with industry
- You can look at survey on the web

Survey: GEM

- Basic unit dimensions up to $70*50 \text{ cm}^2$ †
- Detector dimensions up to $120*120 \text{ cm}^2$ †
- Production at mainly at CERN
 - Small numbers in 2009 ~70
 - Later ~140

† beyond WS capabilities

Survey: single mask GEM

- Basic unit dimensions up to 70*50 cm²
- Detector dimensions up to 150*70 cm² †
- Production at CERN

Survey: THGEM

- Basic unit dimensions up to 60*60 cm²
- Detector dimensions up to 60*60 cm²
- Production at CERN and industry
 - Small numbers

Survey: RETGEM

- Basic unit dimensions up to $15*15 \text{ cm}^2$
- Detector dimensions up to $40*40 \text{ cm}^2$ †
- Production at CERN
 - Small numbers

Survey: Micromegas, bulk

- Basic unit dimensions up to $10*10 \text{ cm}^2$
- Detector dimensions up to $350*180 \text{ cm}^2$ †
- Production at CERN
 - Small numbers

Survey: Micromega, microbulk

- Basic unit dimensions up to $10*10 \text{ cm}^2$
- Detector dimensions up to $100*100 \text{ cm}^2$ †
- Production at CERN
 - Small numbers

Survey: MHSP

- Basic unit dimensions up to $3*3 \text{ cm}^2$
- Detector dimensions up to $10*10 \text{ cm}^2$
- Production at CERN
 - Small numbers

My conclusions

- CERN workshop should extend capabilities
- We should define priorities in collaboration with TS
- We may have to contribute resources
- A 'real' project with larger unit number would make things easier