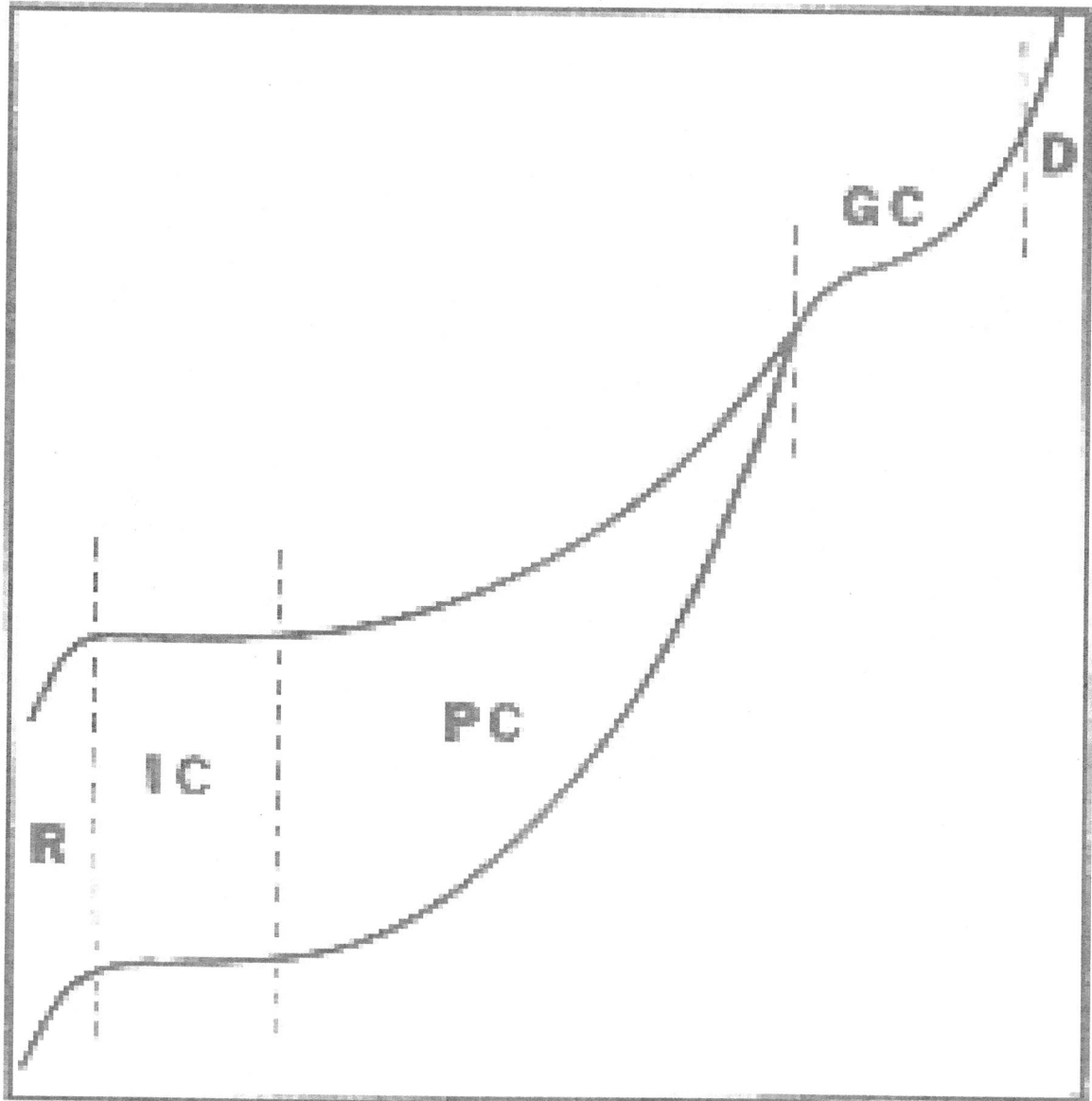


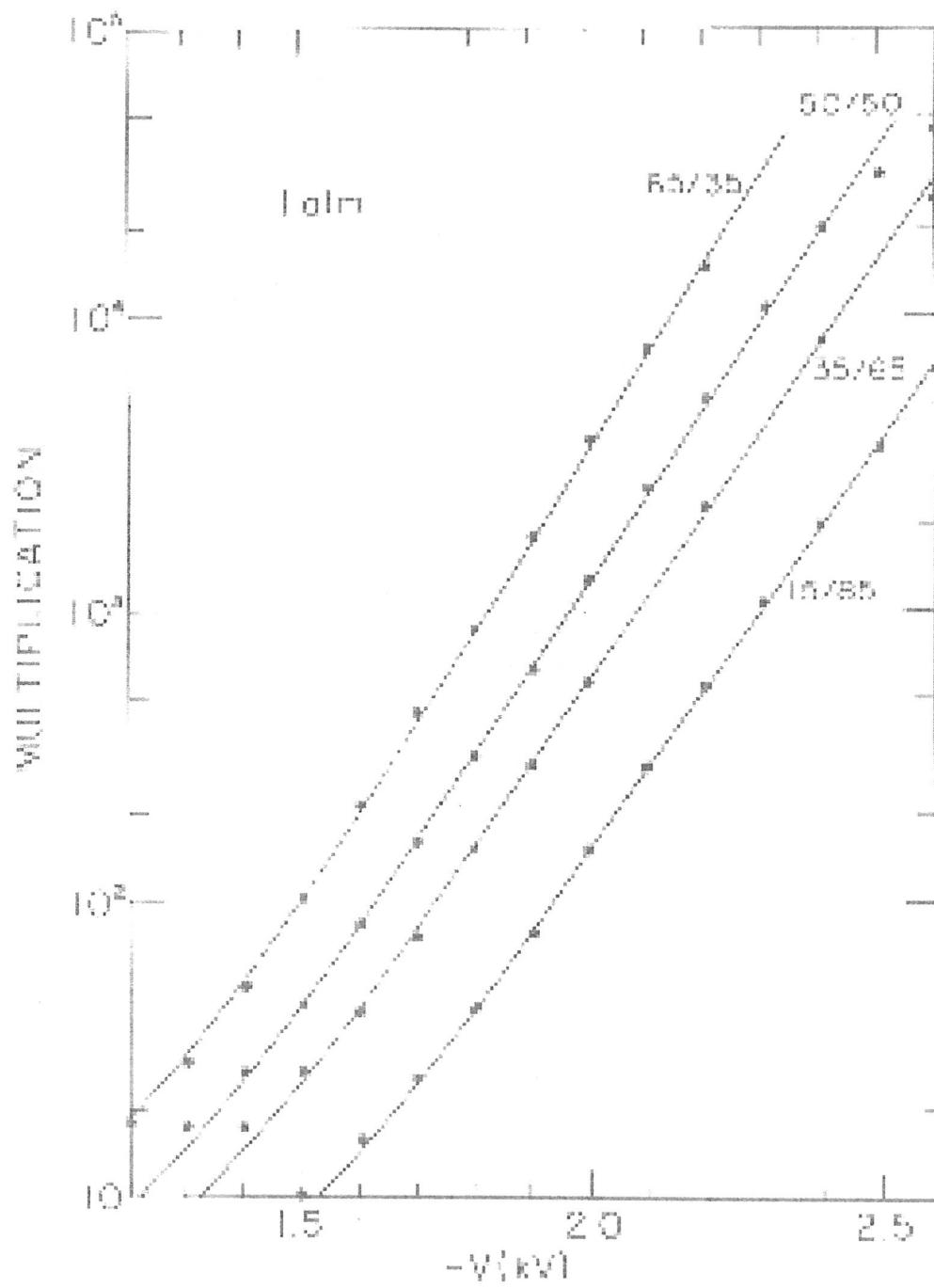
Collected Ions



Voltage

"Week 6 (Trackers)" figures

Phy 7361



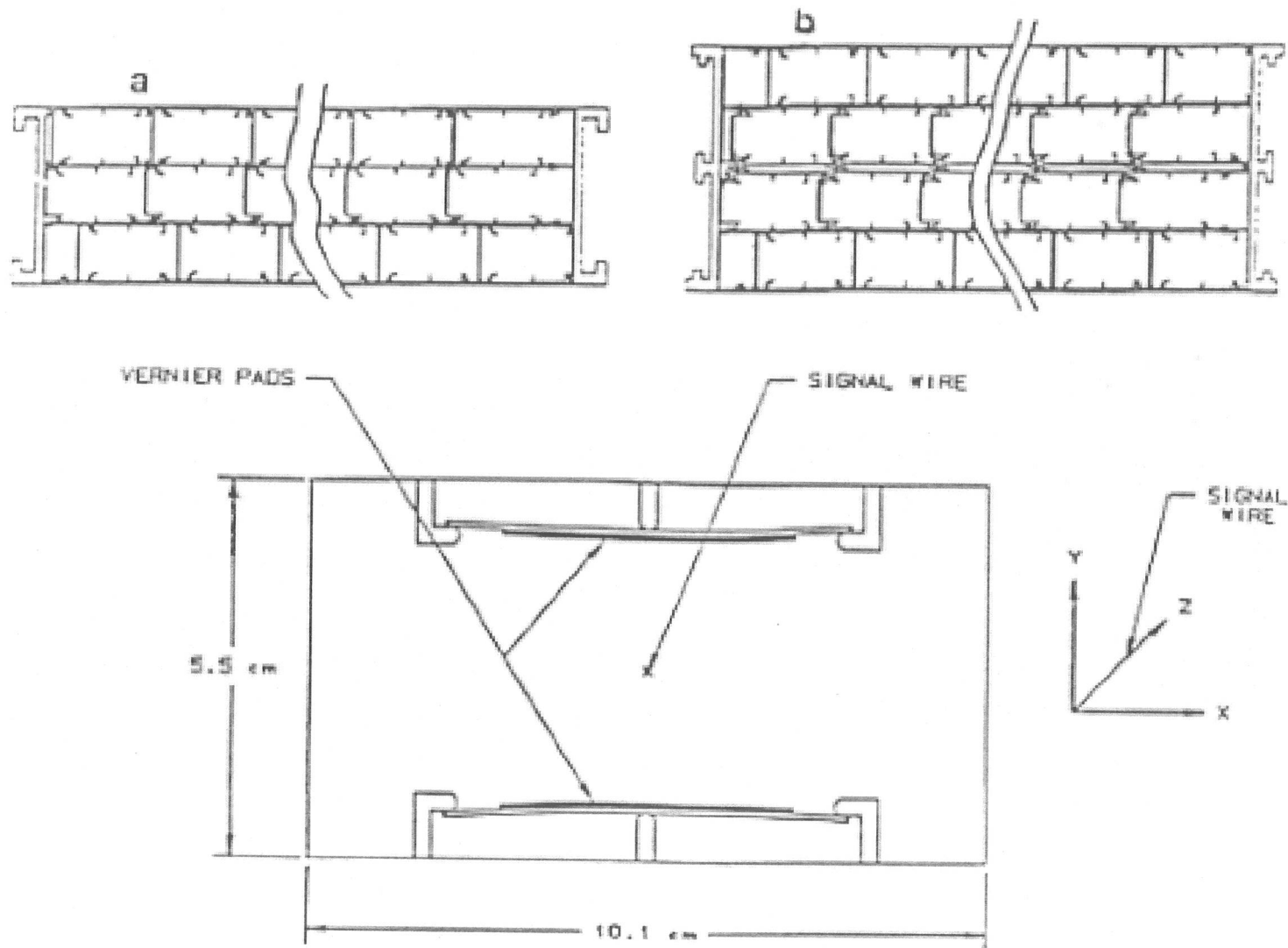


Figure 4: Wamus. Fig (a) is the end view of the 3-deck extrusion. Fig. (b) is the end view of the 4-deck extrusion. The larger figure shows the end view of a single cell, including the cathode pad.

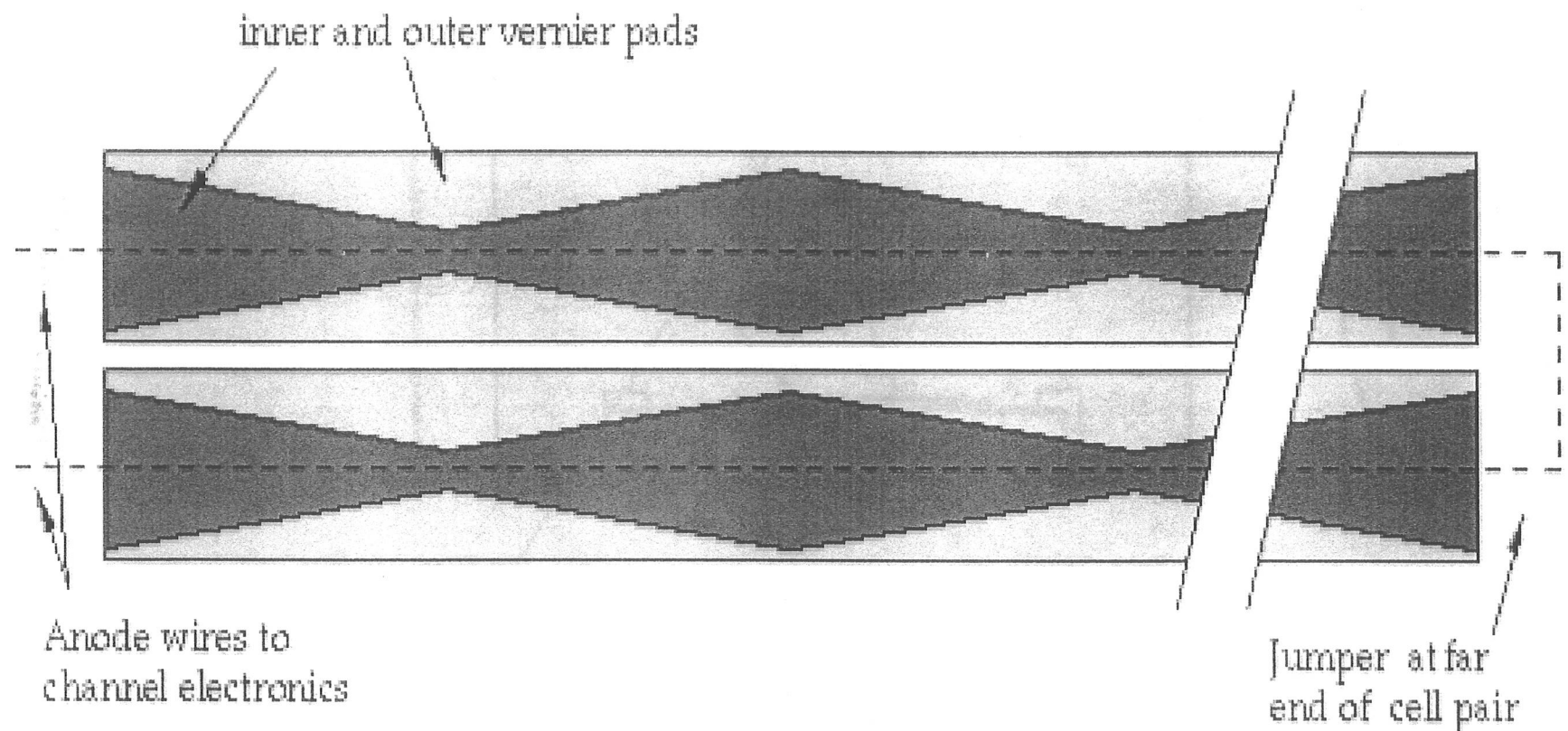
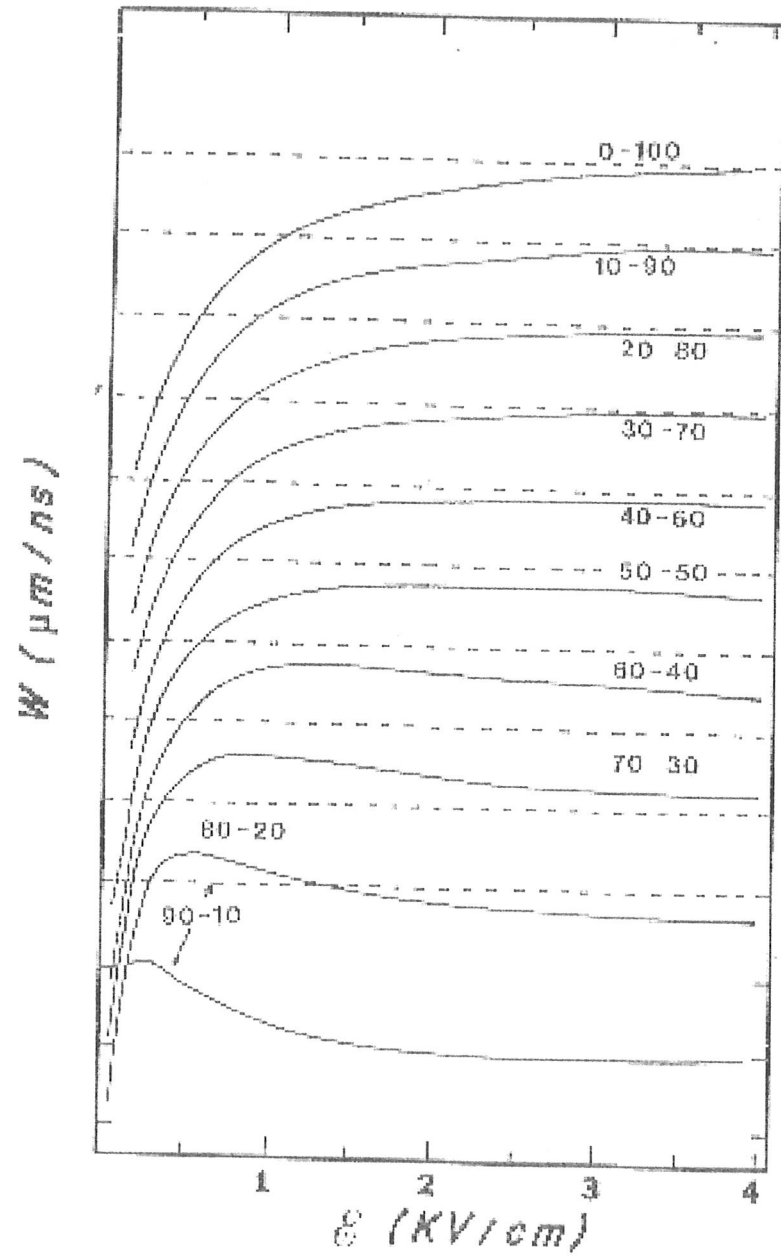


Table 10.1. *Drift velocities of pure gases, STP (cm/ μ s)*

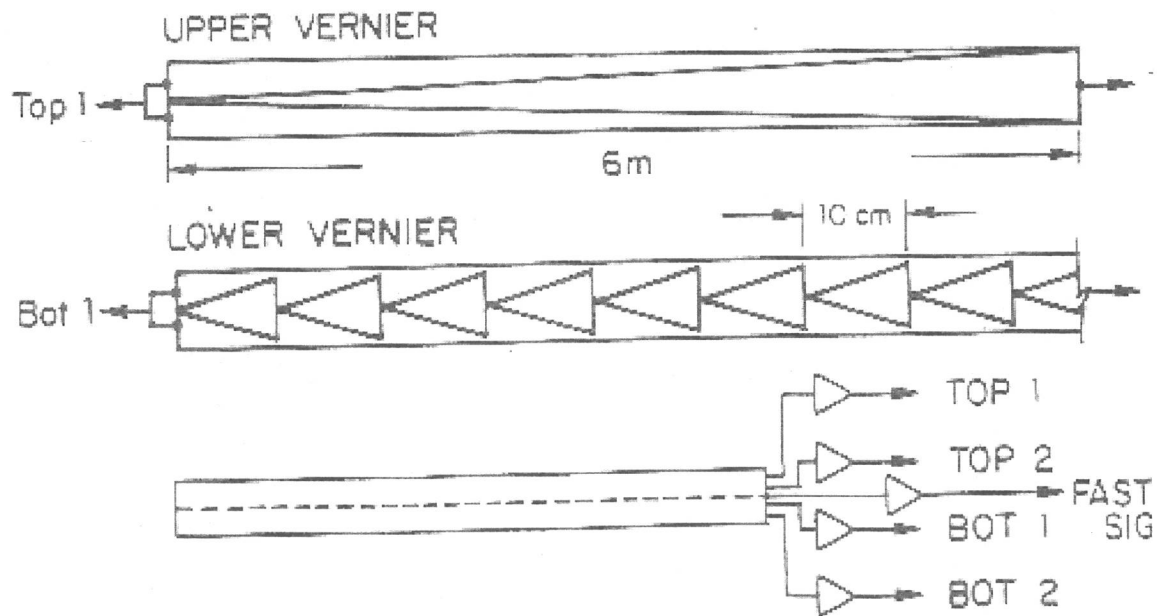
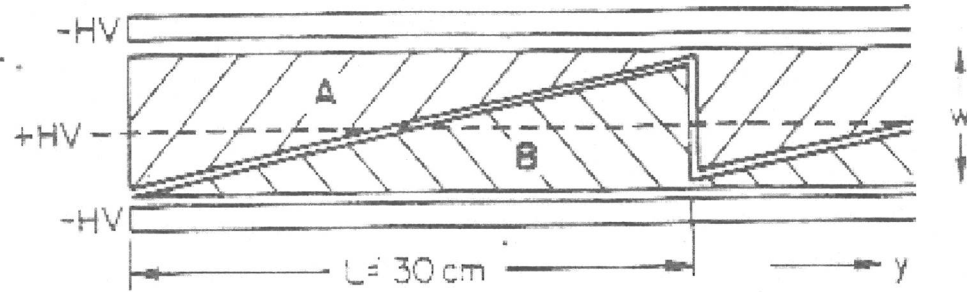
Gas	\mathcal{E} (kV/cm)		
	1	2	3
CH ₄	10.4	8.5	7.1
C ₂ H ₆	5.2	5.5	5.5
C ₃ H ₈	4.0	4.7	4.9
iso-C ₄ H ₁₀	3.3	5.1	
C ₂ H ₄	4.8	5.1	4.8
He	1.0	1.6	2.3
Ar	0.4	0.7	1.1
Ar (liquid)	0.2	0.3	0.3
Xe	0.2	0.4	0.6
H ₂	1.1	1.8	2.0
N ₂	0.9	1.4	2.0
O ₂	2.4	3.1	3.8
CO ₂	0.7	1.5	2.6
CH ₂ (OCH ₃) ₂	0.7	1.5	2.1

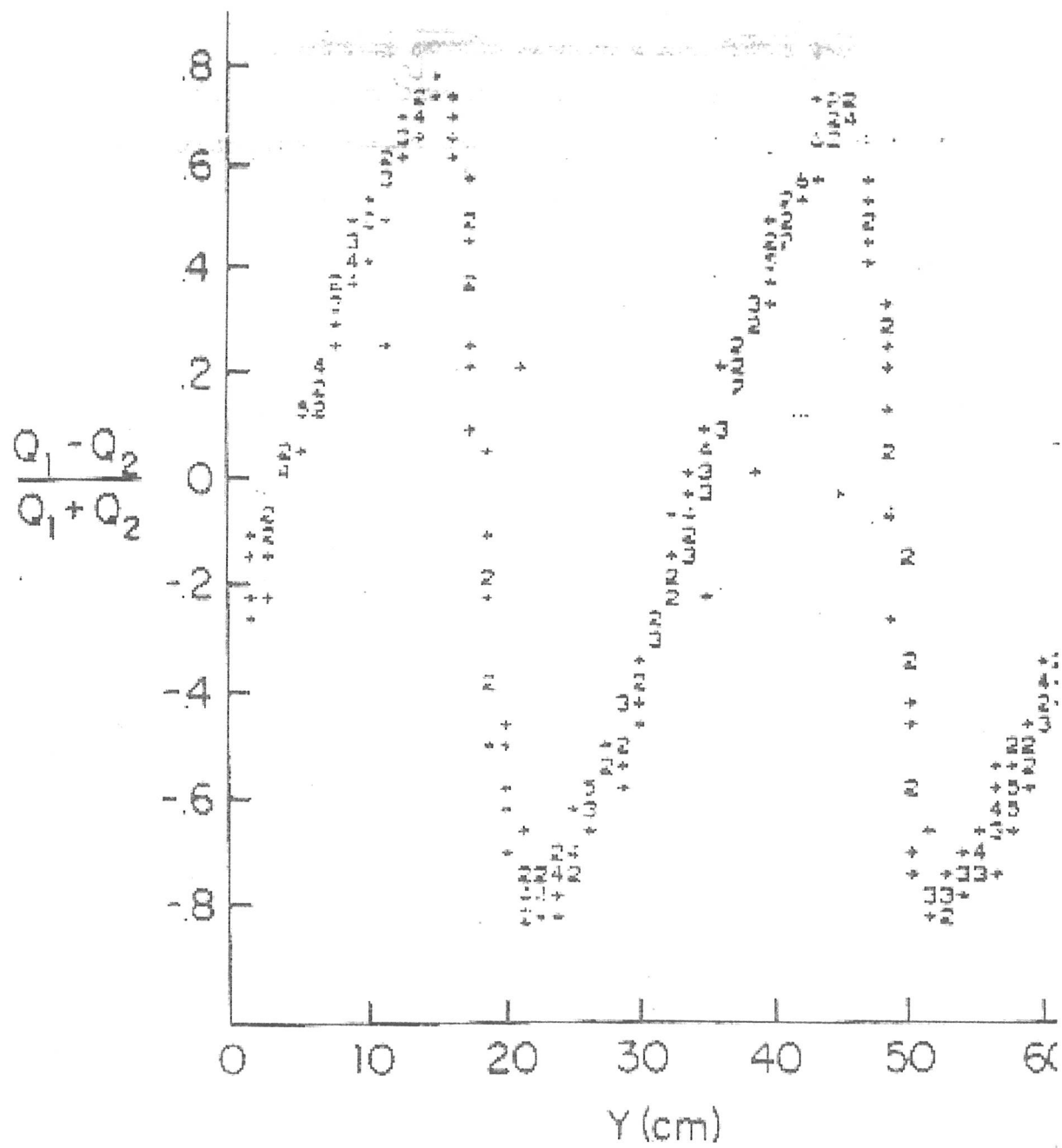
Source: A. Peisert and F. Sauli, CERN Report 84-08, 1984; B. Jean-Marie, V. Lepeltier, and D. L'Hote, Nuc. Instr. Meth. 159: 213, 1979; F. Sauli, CERN Report 77-09, 1977.

Figure 10.3 Drift velocities of argon-propane gas mixture as a function of electric field. (After B. Jean-Marie, V. Lepeltier, and D. L'Hote, Nuc. Instr. Meth. 159: 213, 1979.)



GND

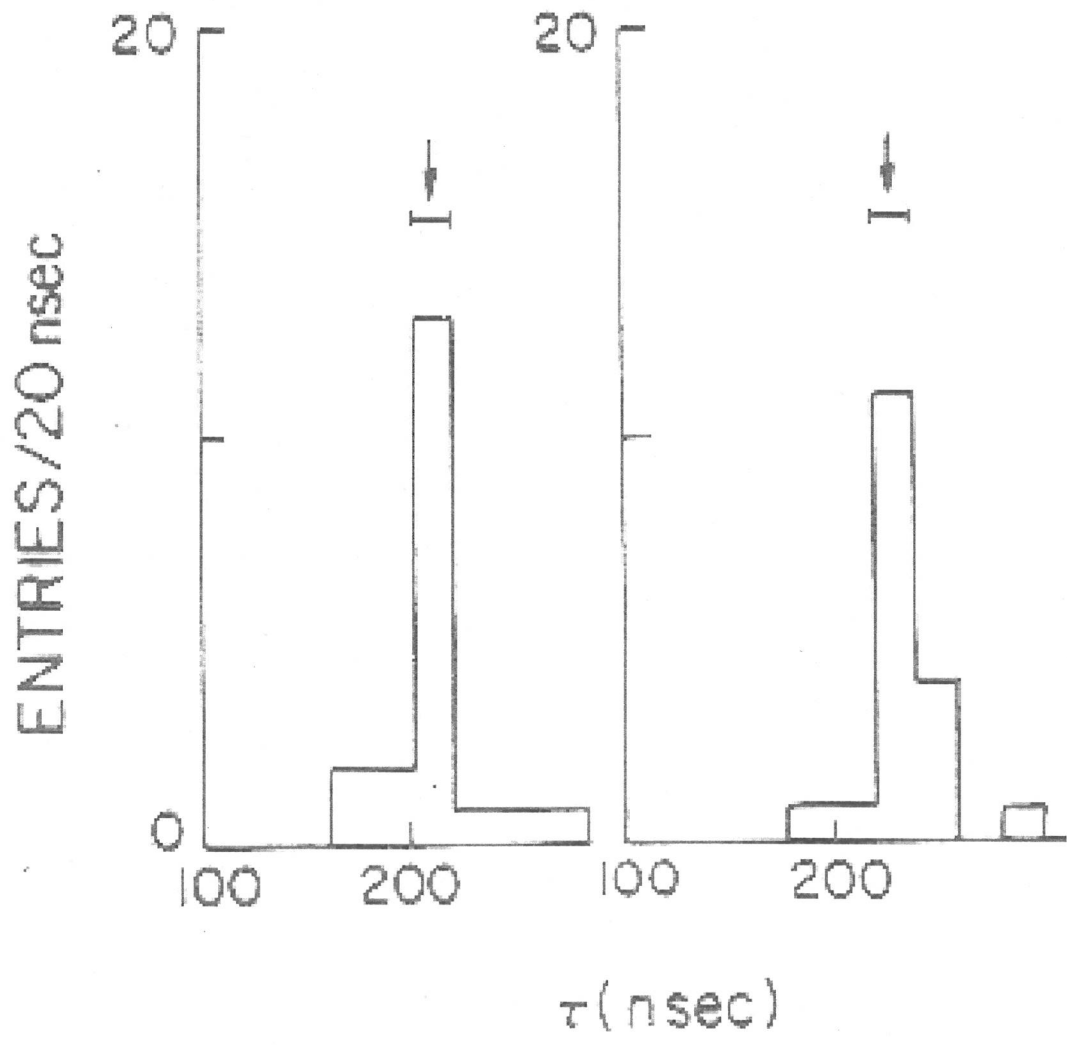


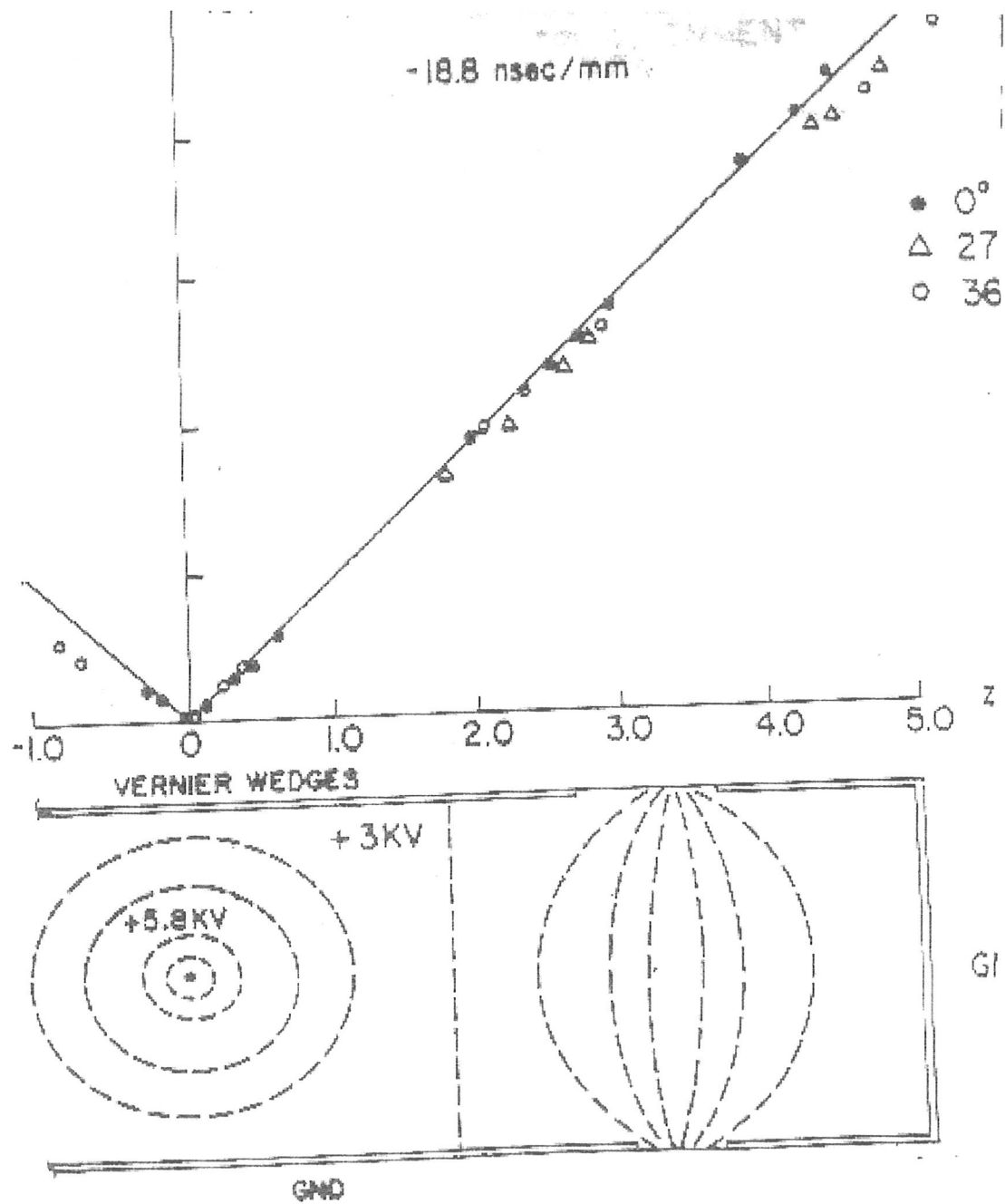


~ 1mm ALIGNMENT
NOW

$1 < z < 2\text{mm}$

$0 < z < 1\text{mm}$





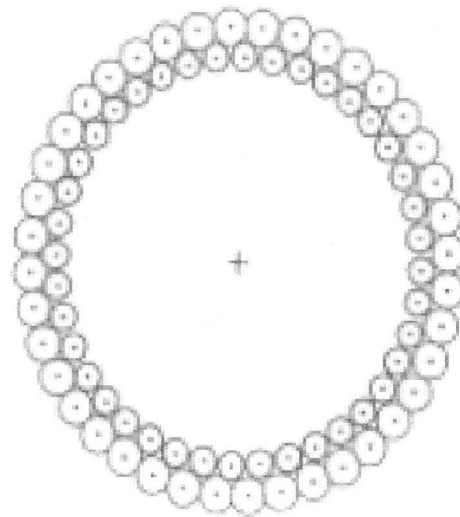
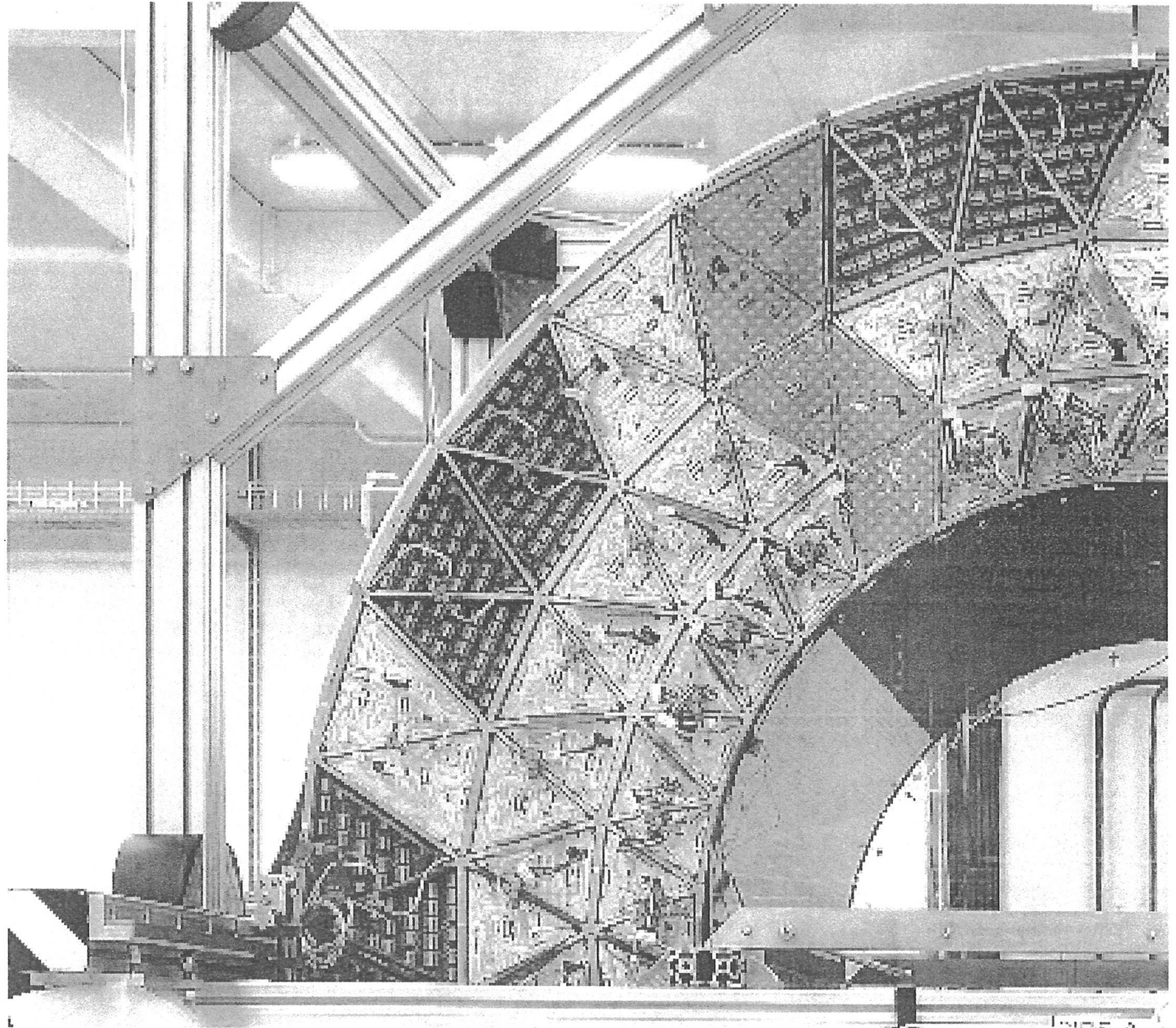
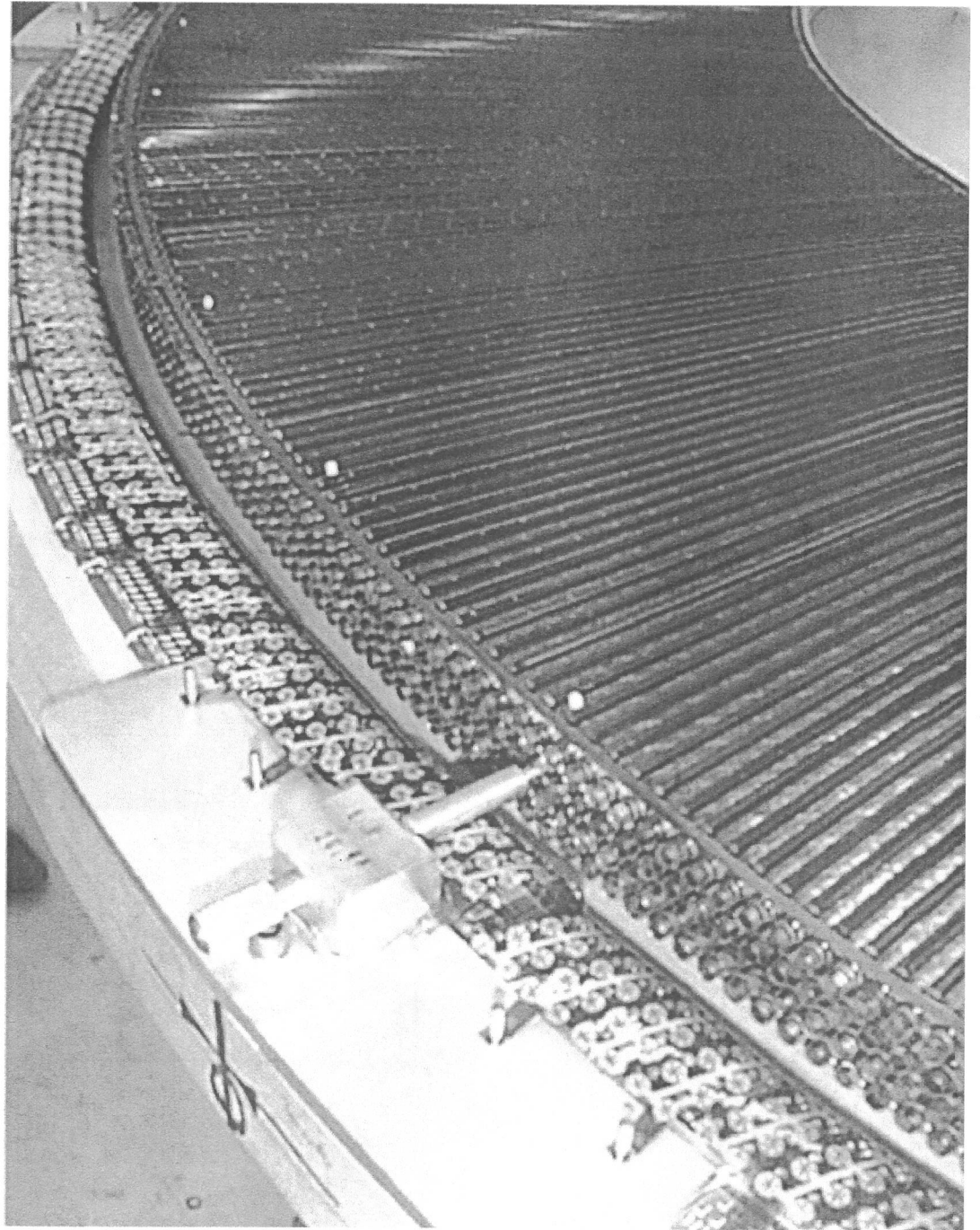


Fig. 7.22. Cylindrical configuration of thin-wall straw-tube chambers [45, 47]

TRT



TRT End



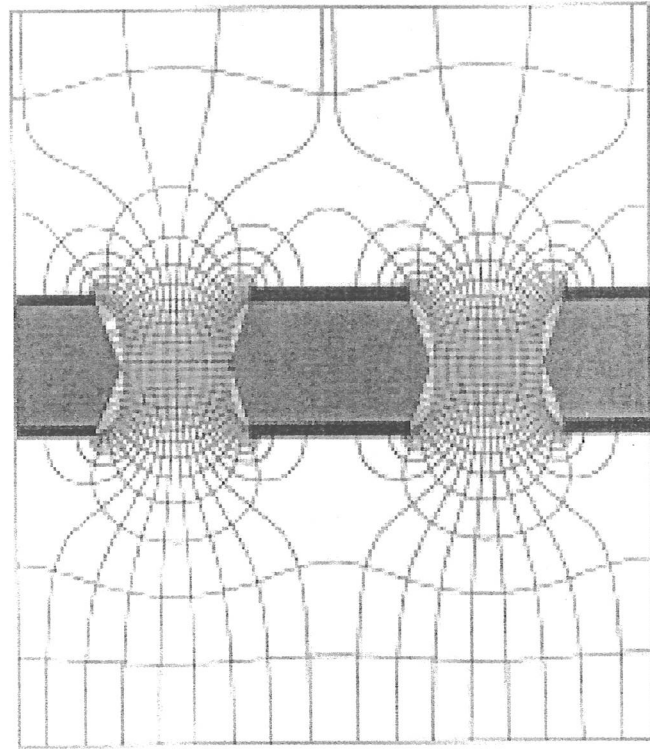
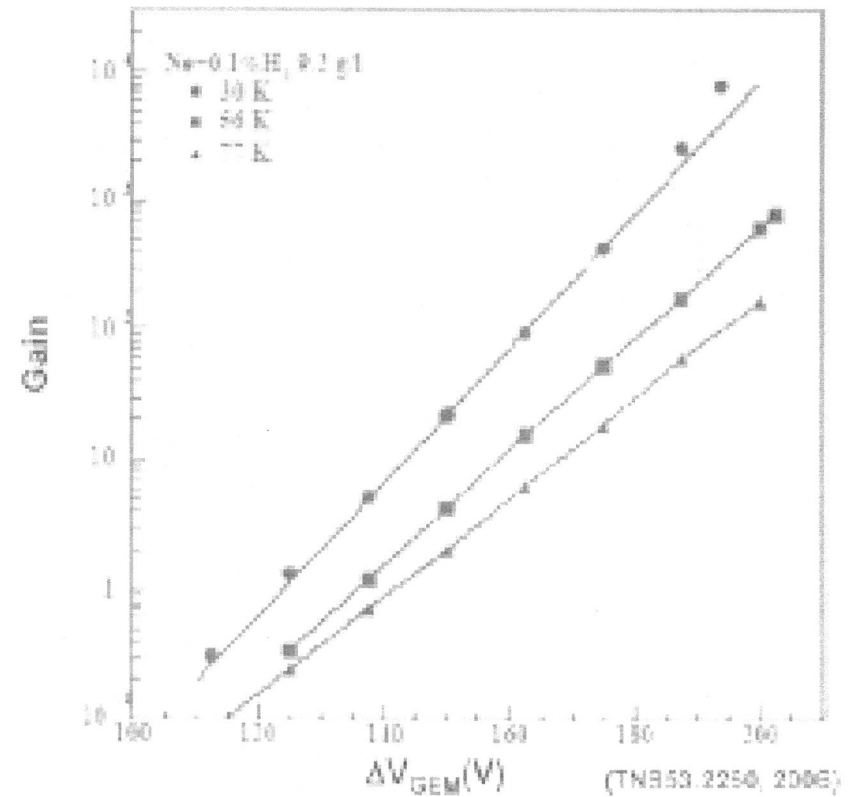
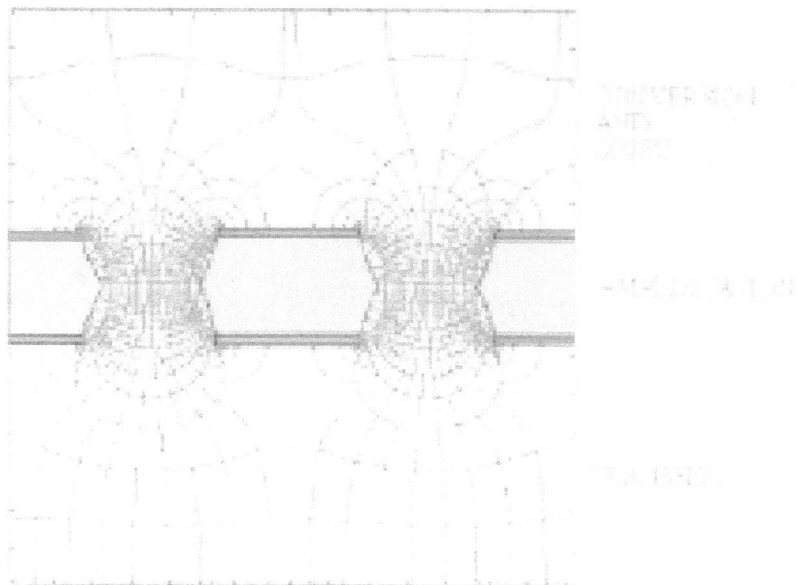
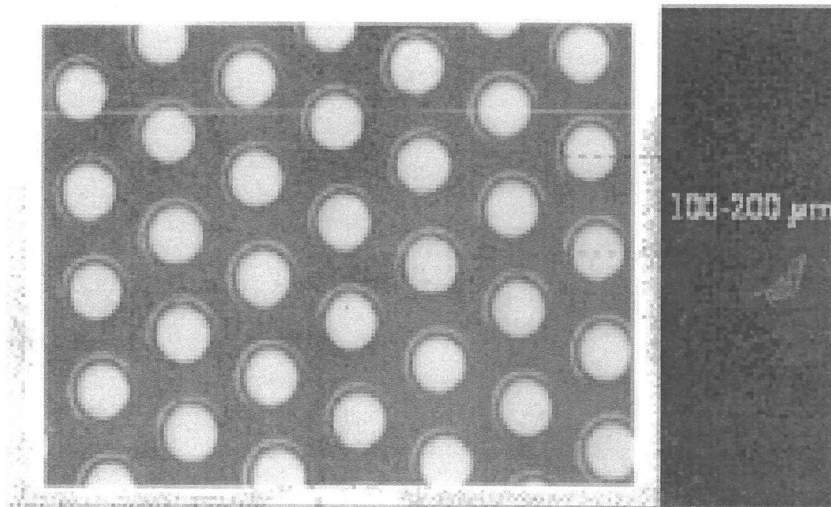


Fig. 7.38. Electric field distribution in a GEM detector [11, 94].

eBubble:

Gas Electron Multipliers

- 2D Readout
- mechanically self-supporting
- access to both surfaces of the structure



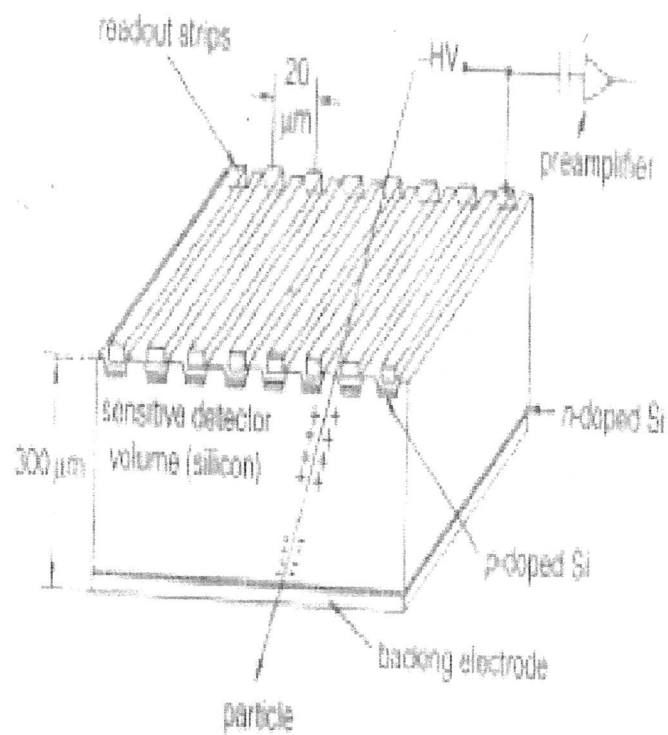
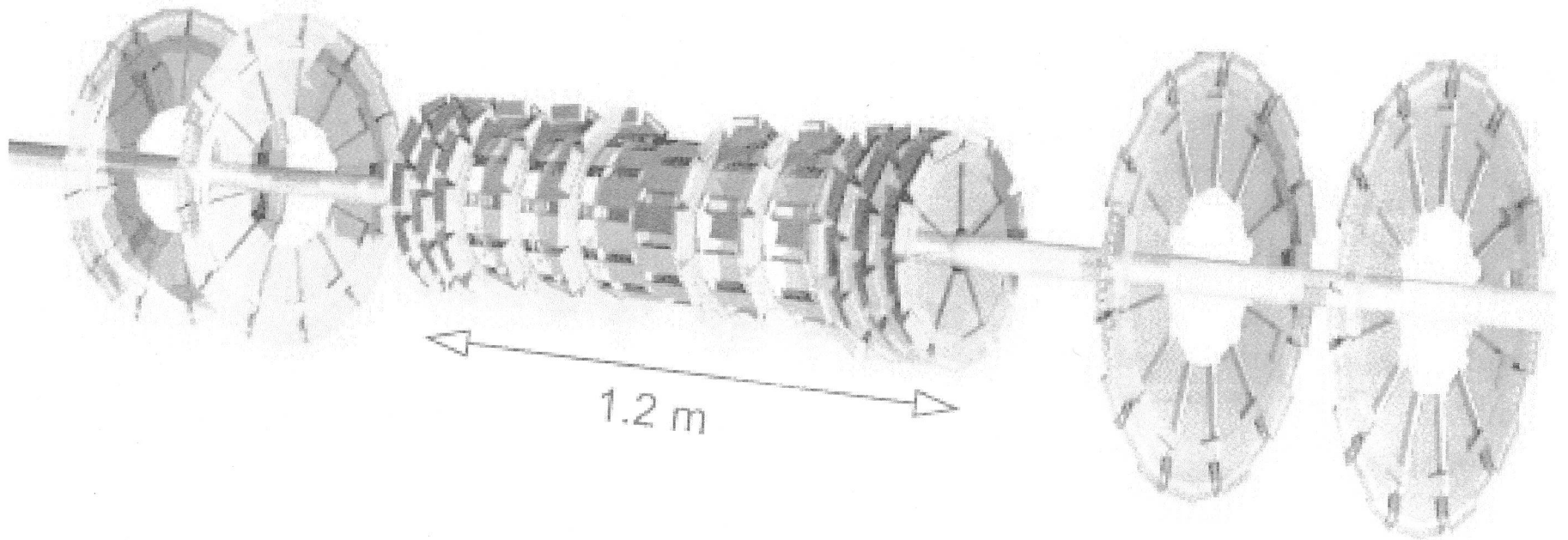
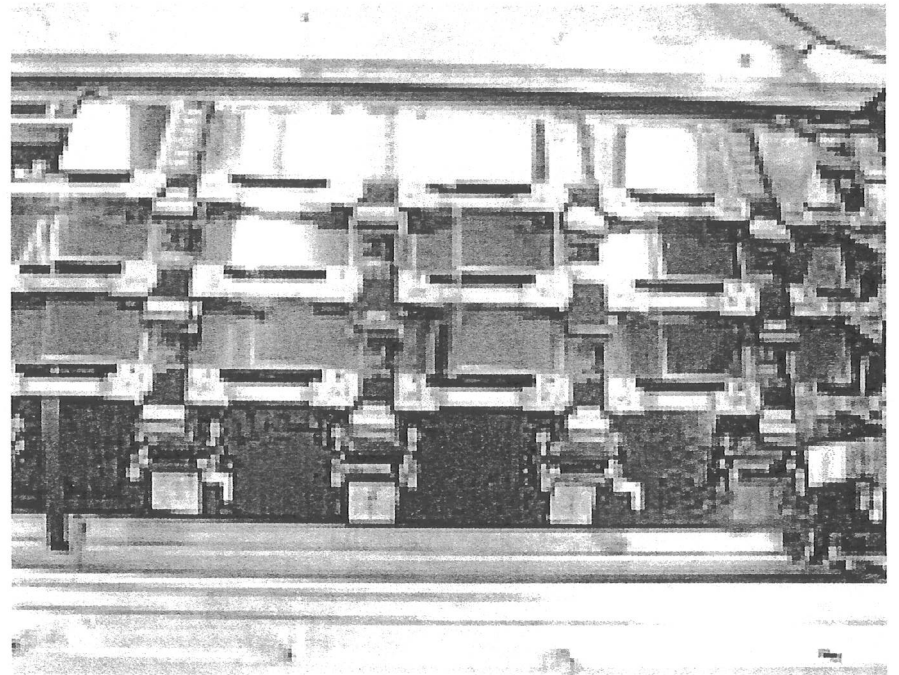
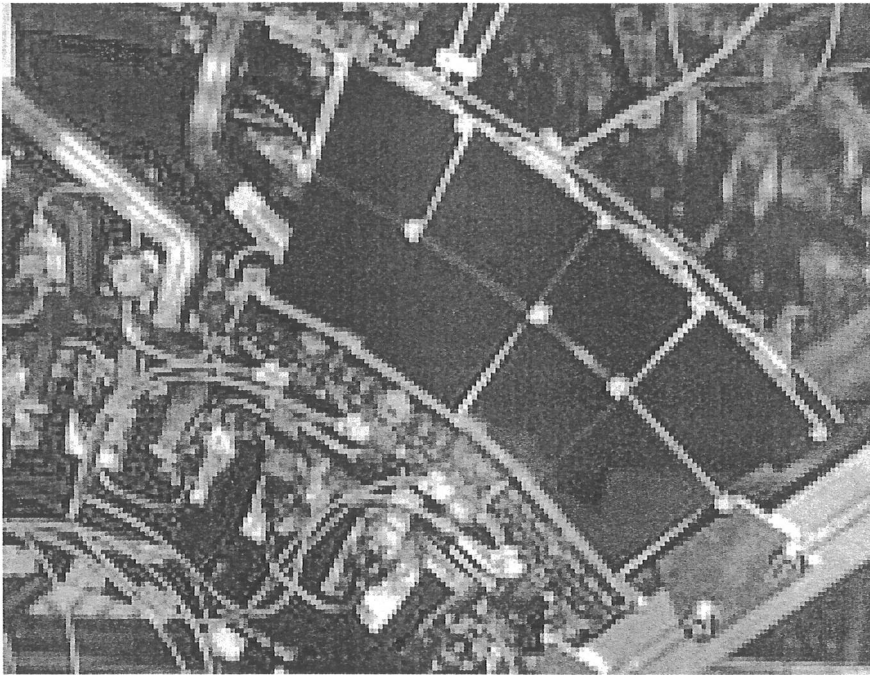


Fig. 7.39. Schematic layout of the construction of a silicon microstrip detector. Each readout strip is at negative potential. The strips are capacitively coupled (not to scale, from [103]).

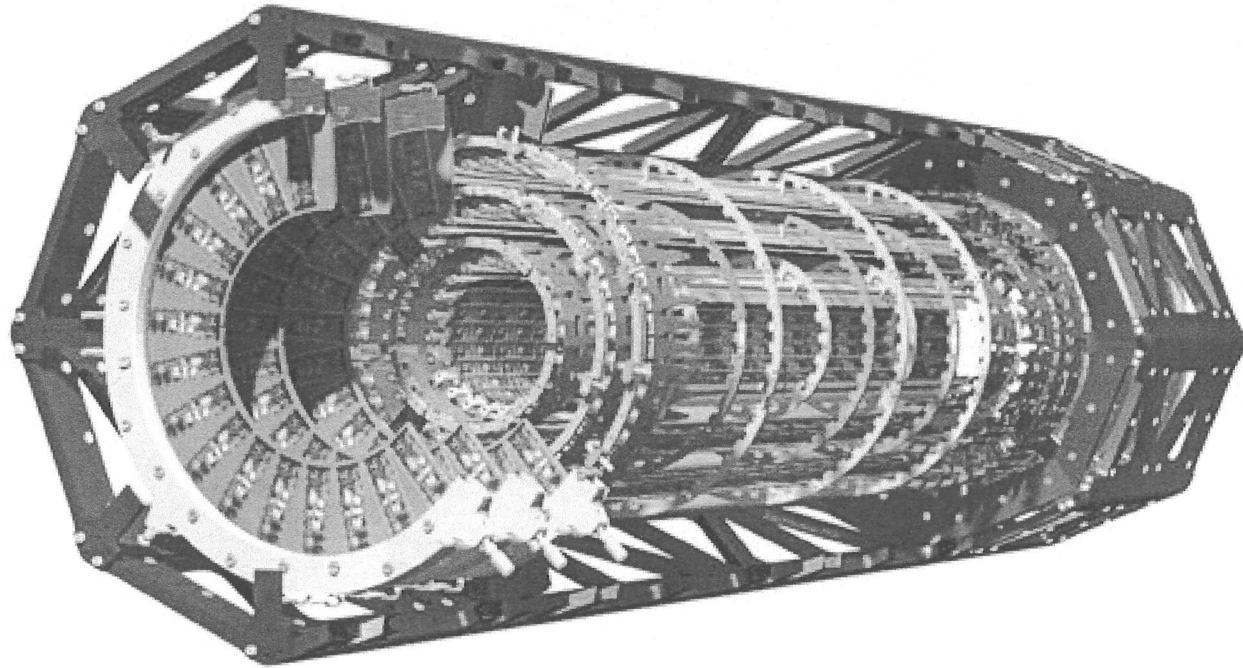
D0 SMT



SCT



ATLAS Pixels



ATLAS Collaboration
2011

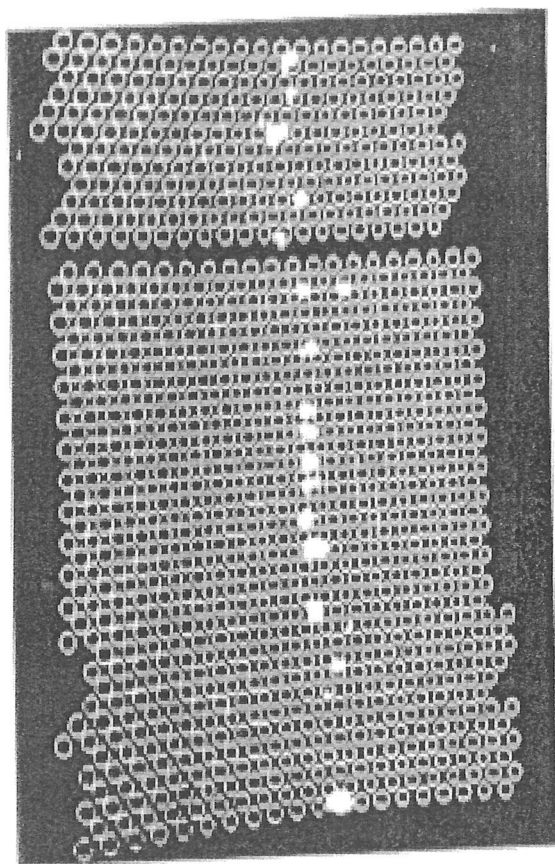
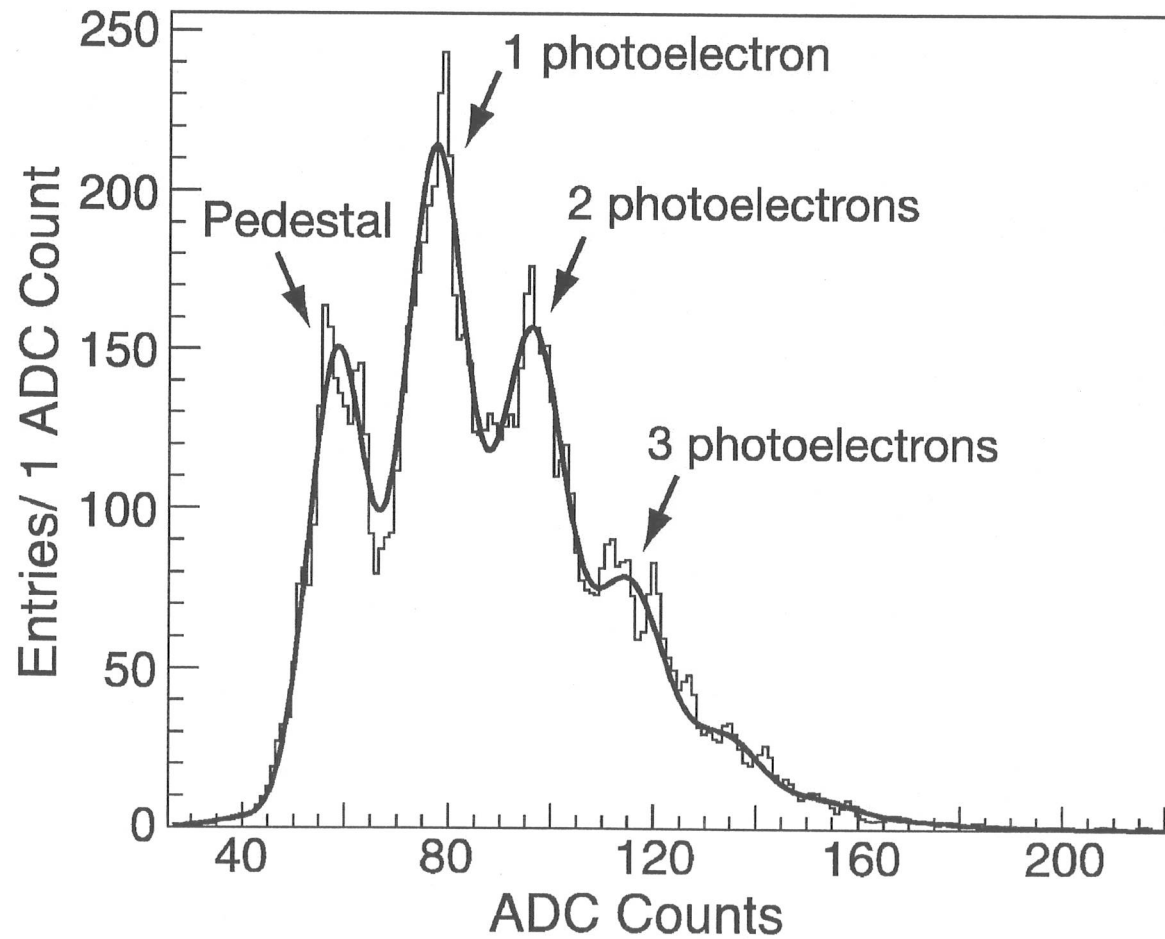
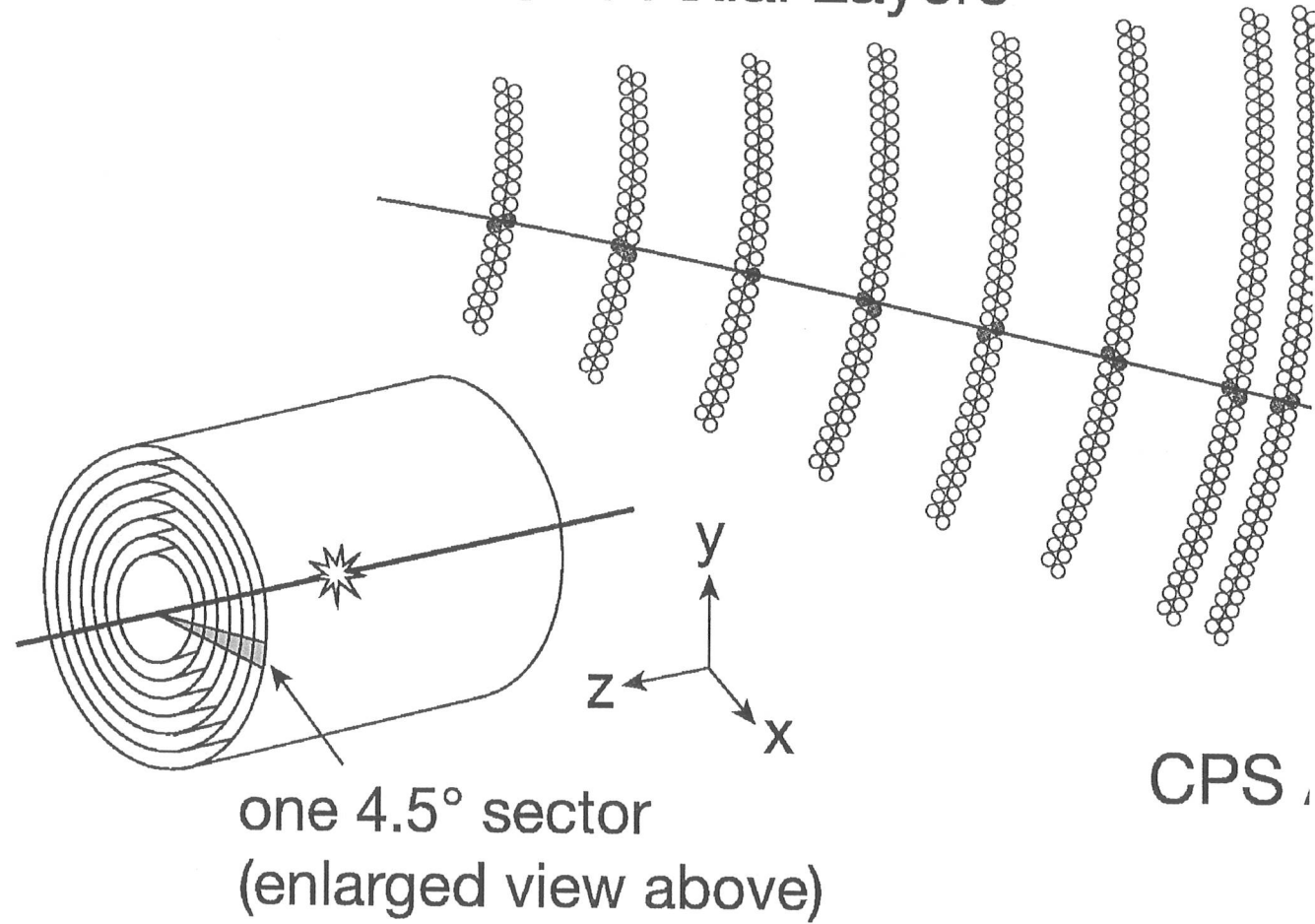


Fig. 7.43. Particle track in a stack of scintillating fibres fibre diameter \approx 1 mm [125].

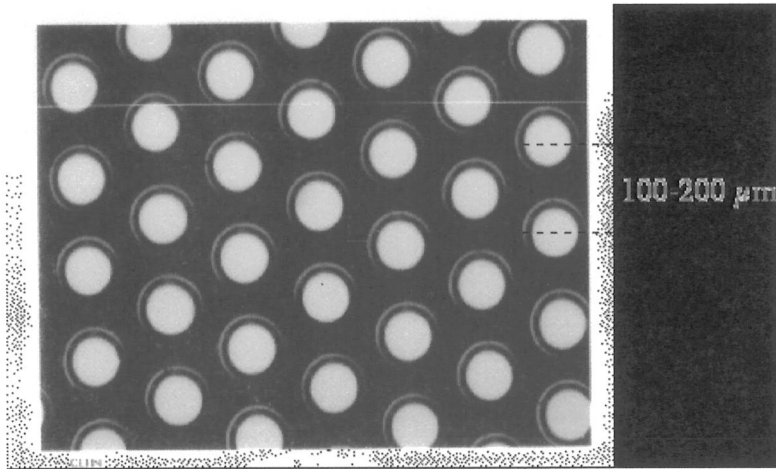
D0 CFT Readout



CFT Axial Layers



GEM readout



Gas Electron Multipliers

- 2D Readout
- mechanically self-supporting
- access to both surfaces of the structure

