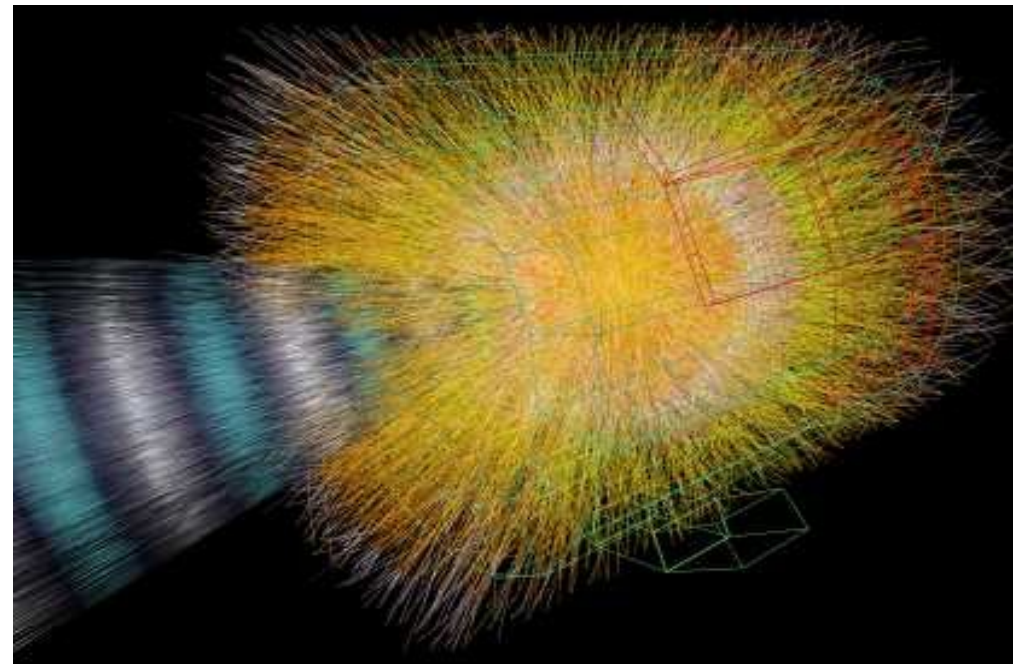
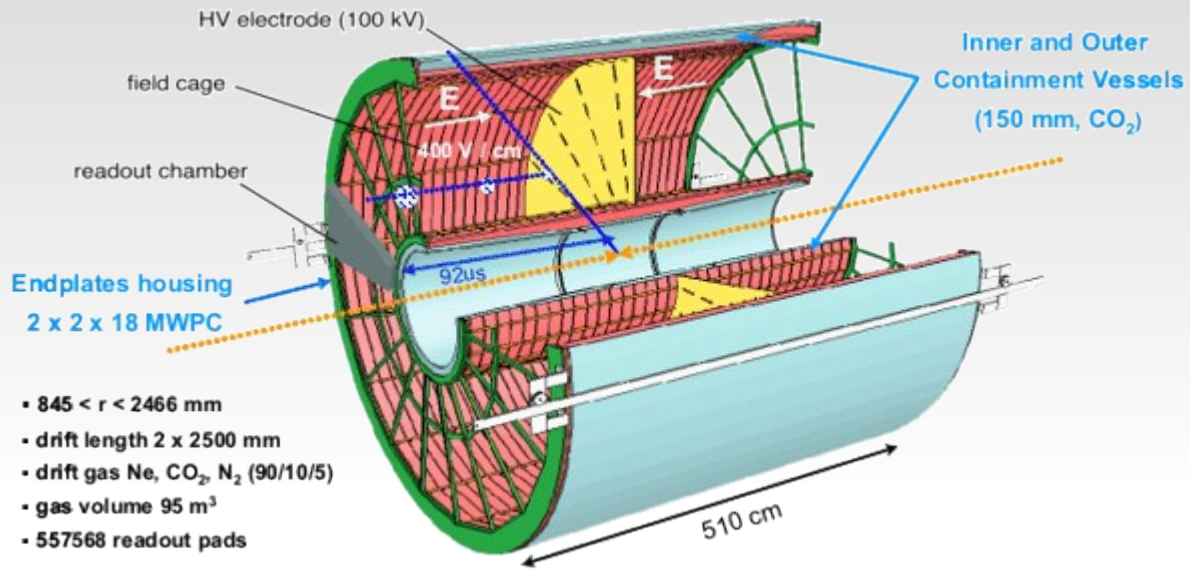
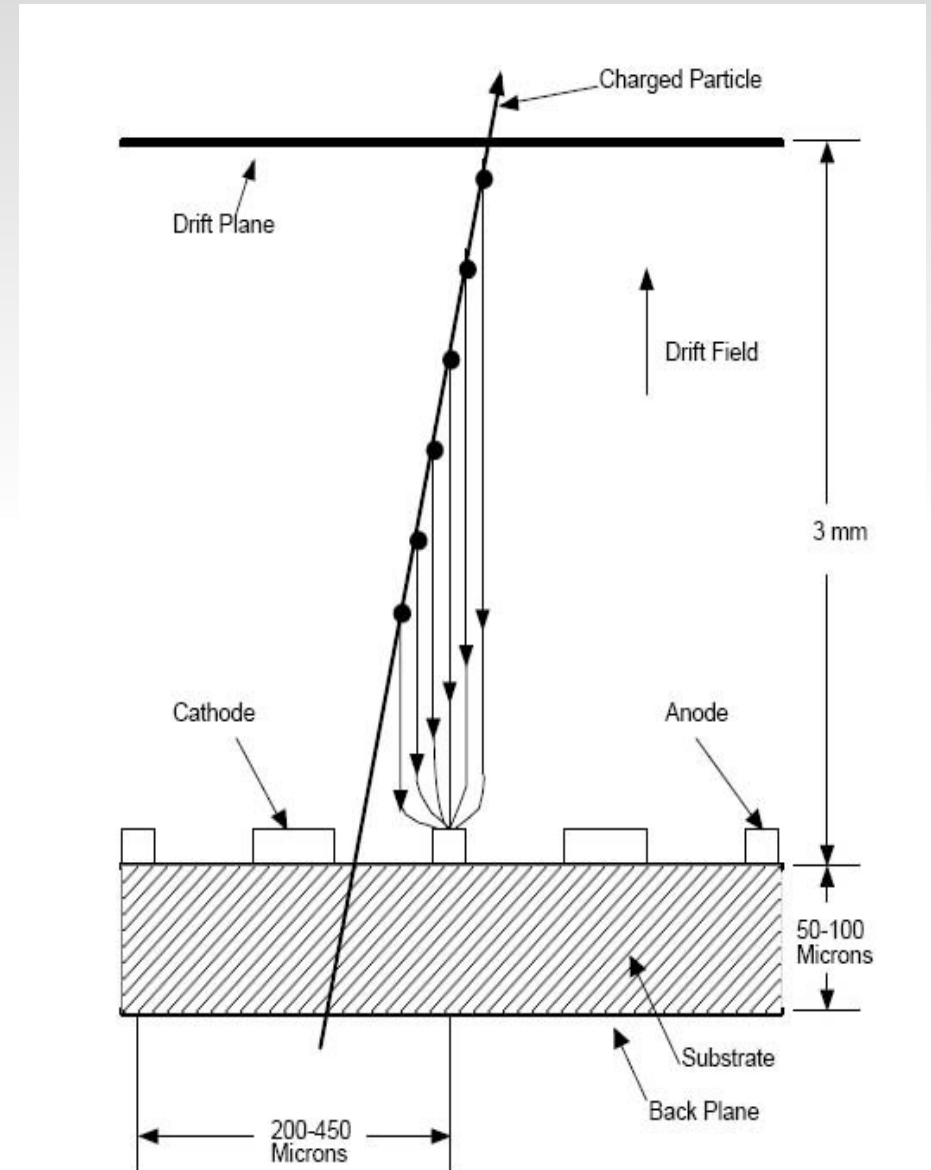
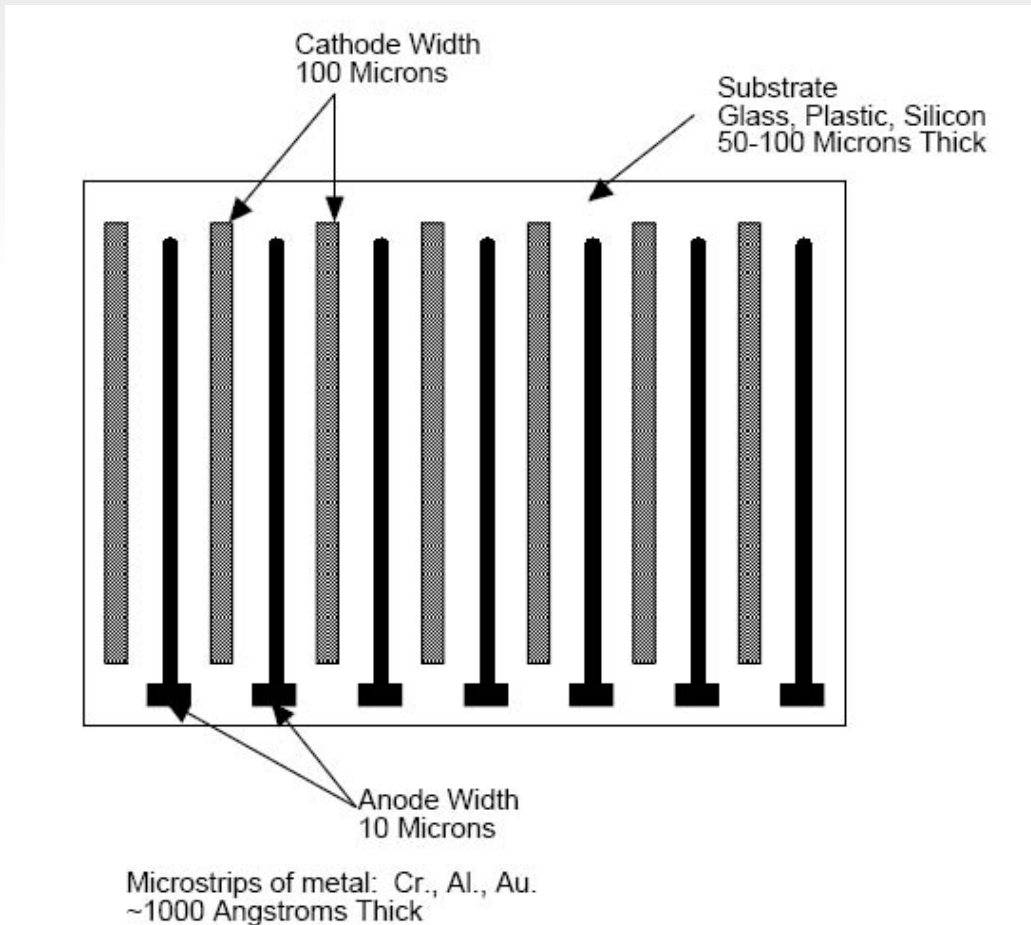


# Fig 4.22 ALICE TPC

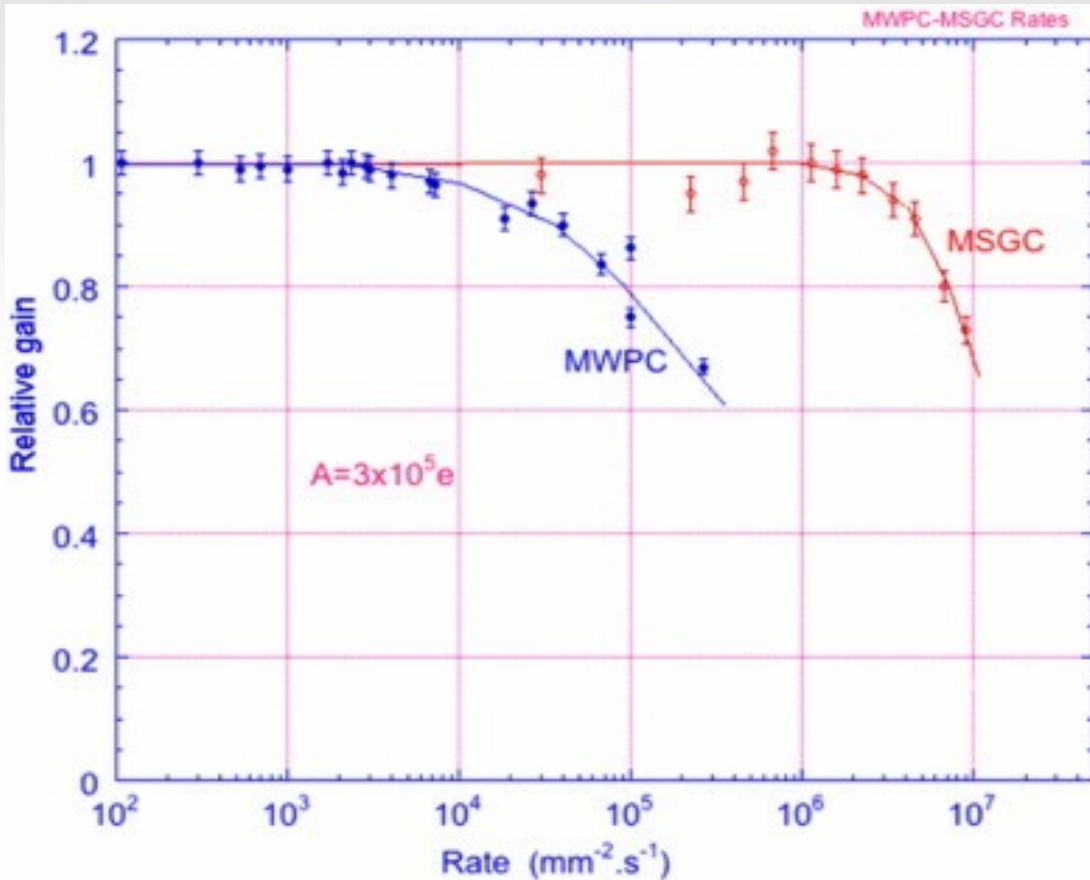


# Fig. 4.23 MSGC (schematisch)

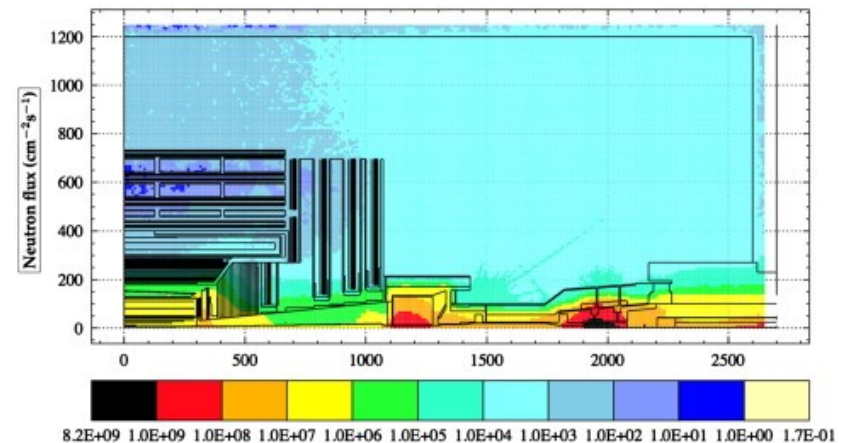




# Fig 4.24 Gasverstärkung vs. Teilchenfluß

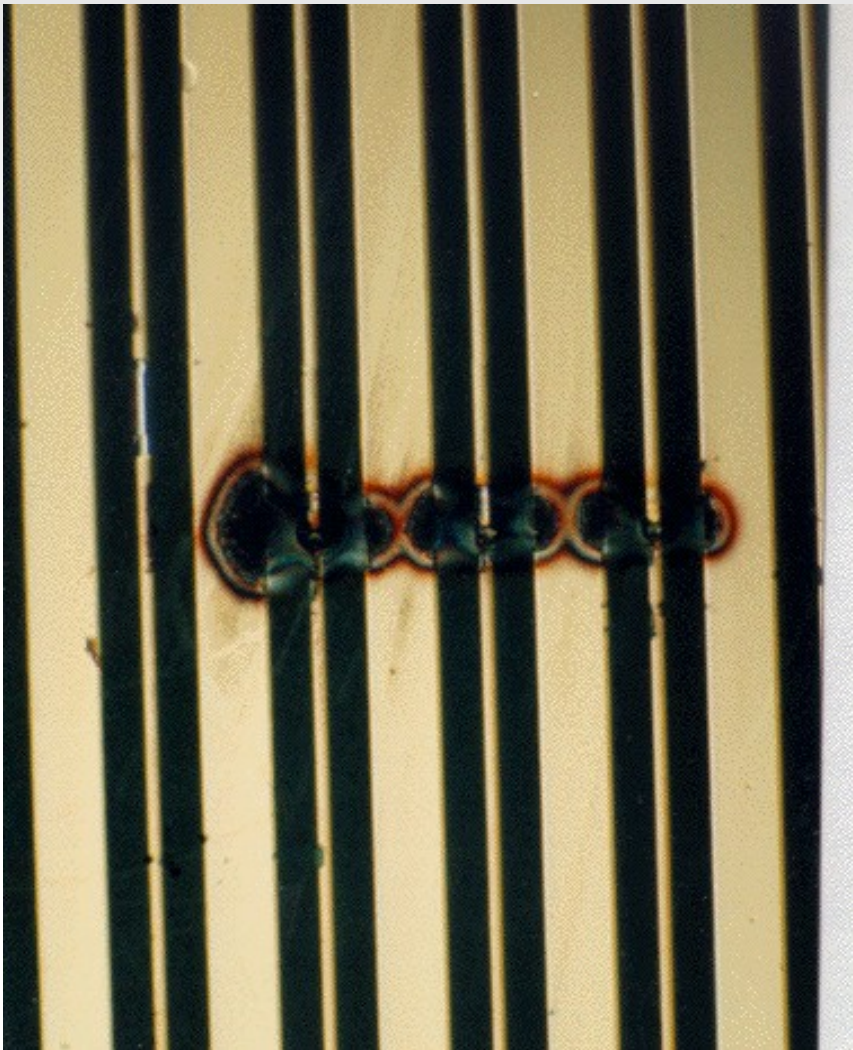


## Teilchenflüsse bei CMS

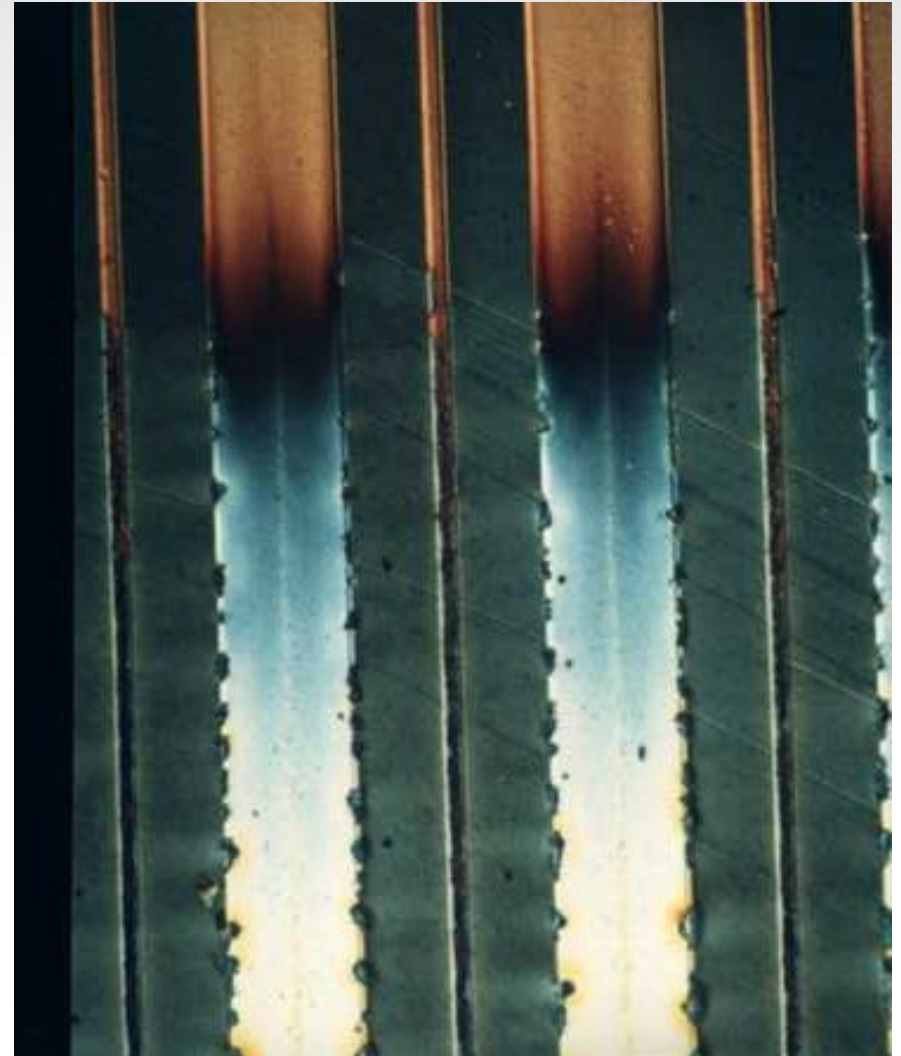


# Fig 4.25 MSGC Aging

Entladung

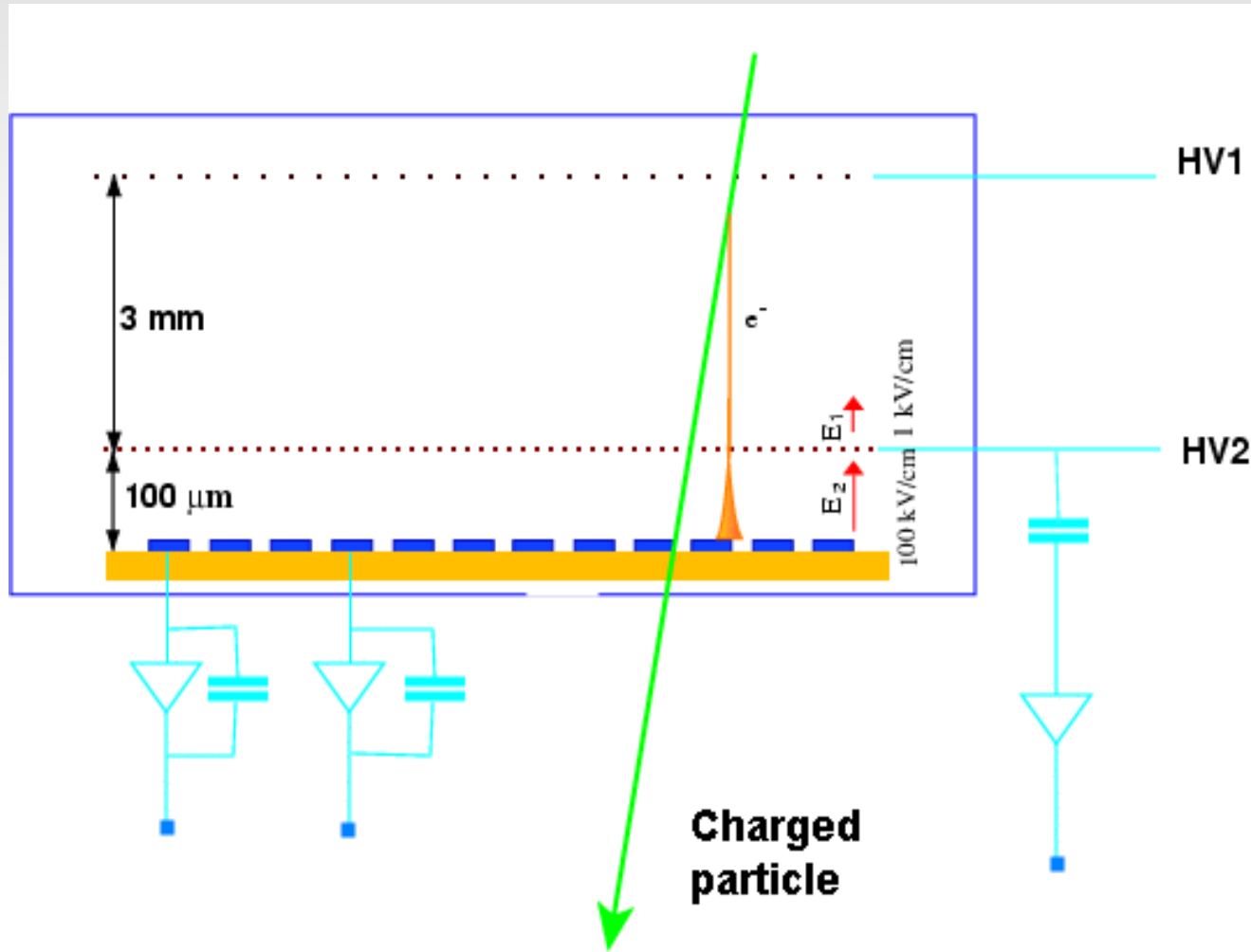


Langsames Altern

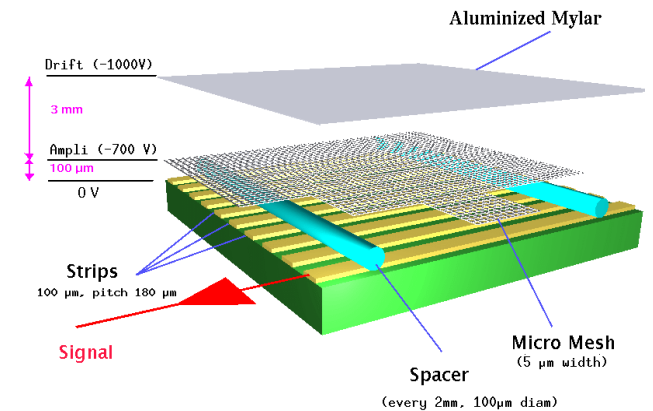




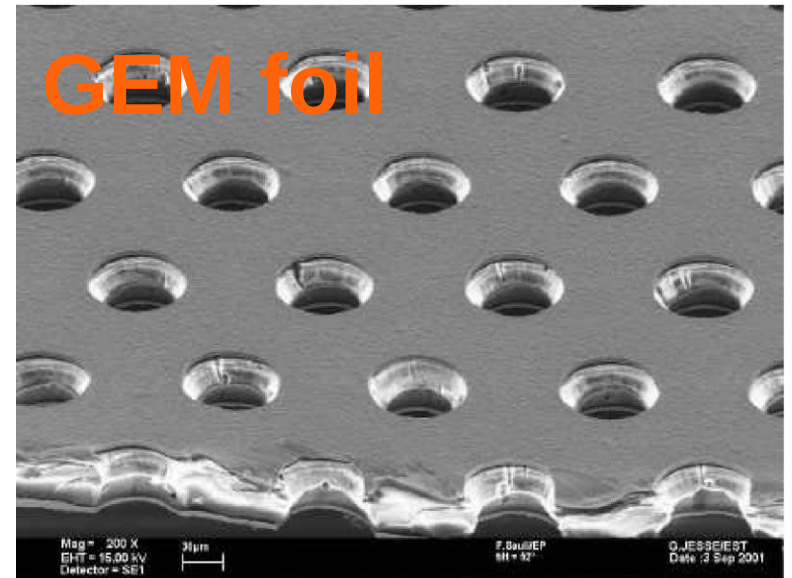
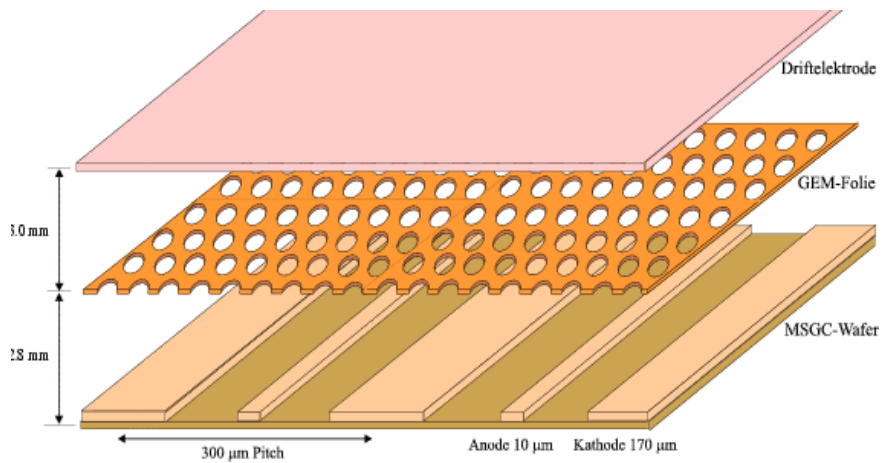
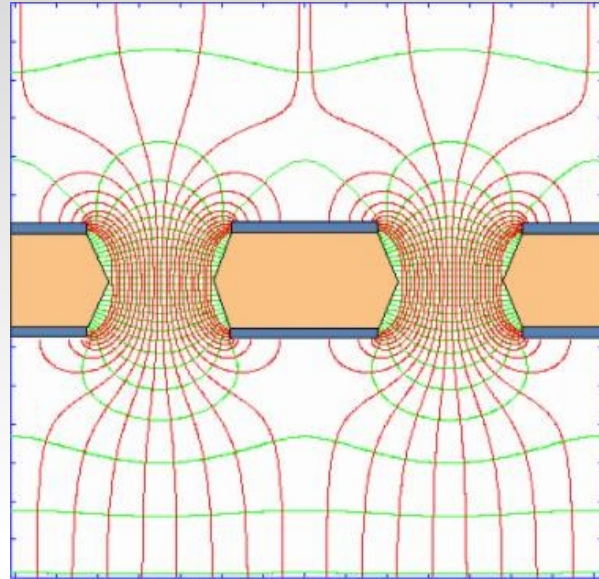
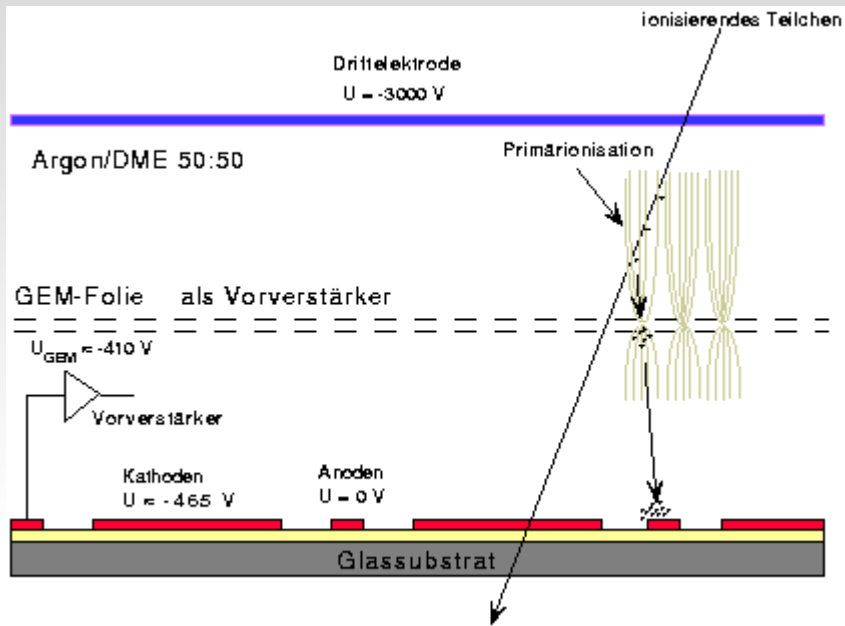
# Fig 4.26 Micromegas



Micromegas @COMPASS

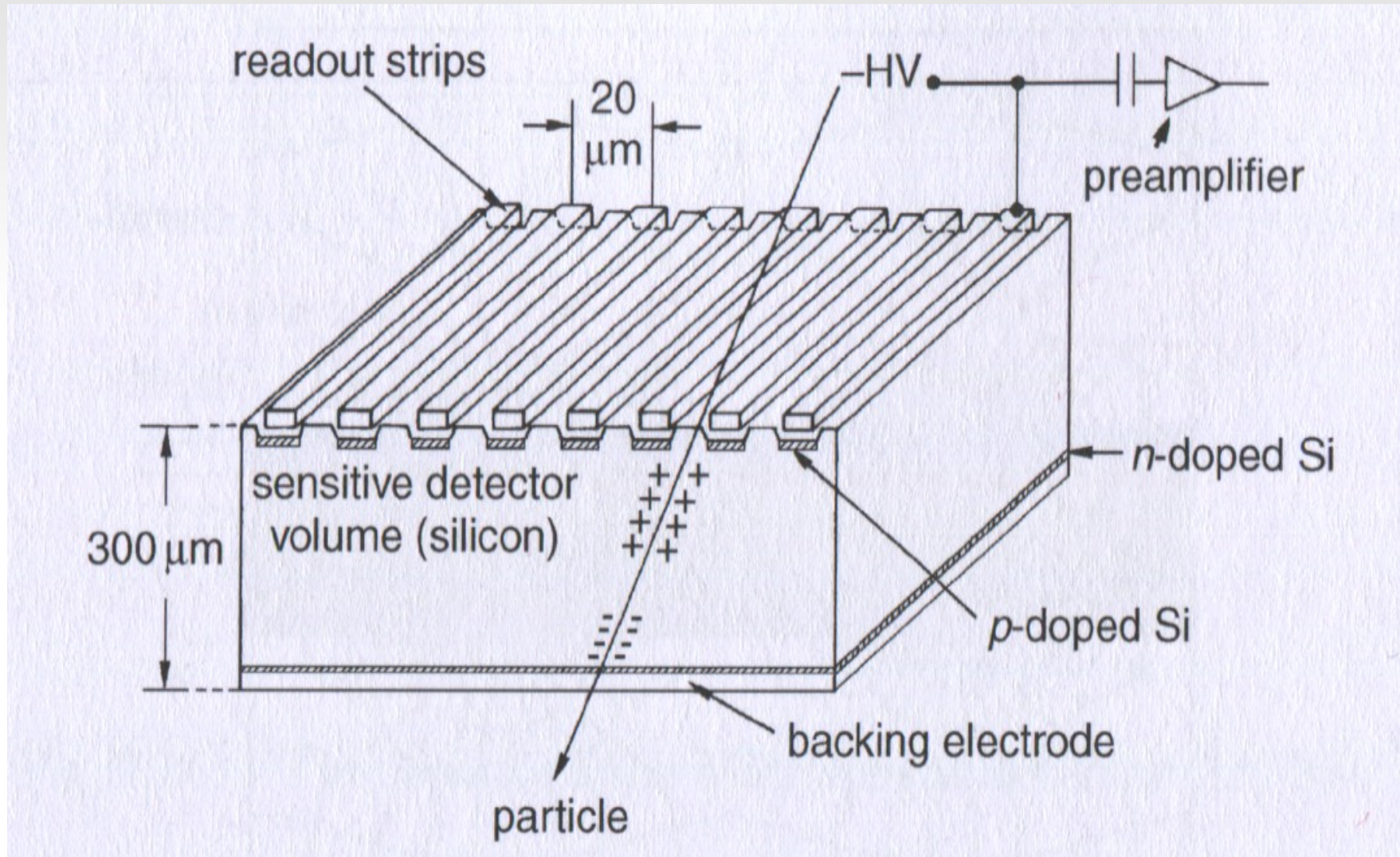


# Fig 4.27 GEM



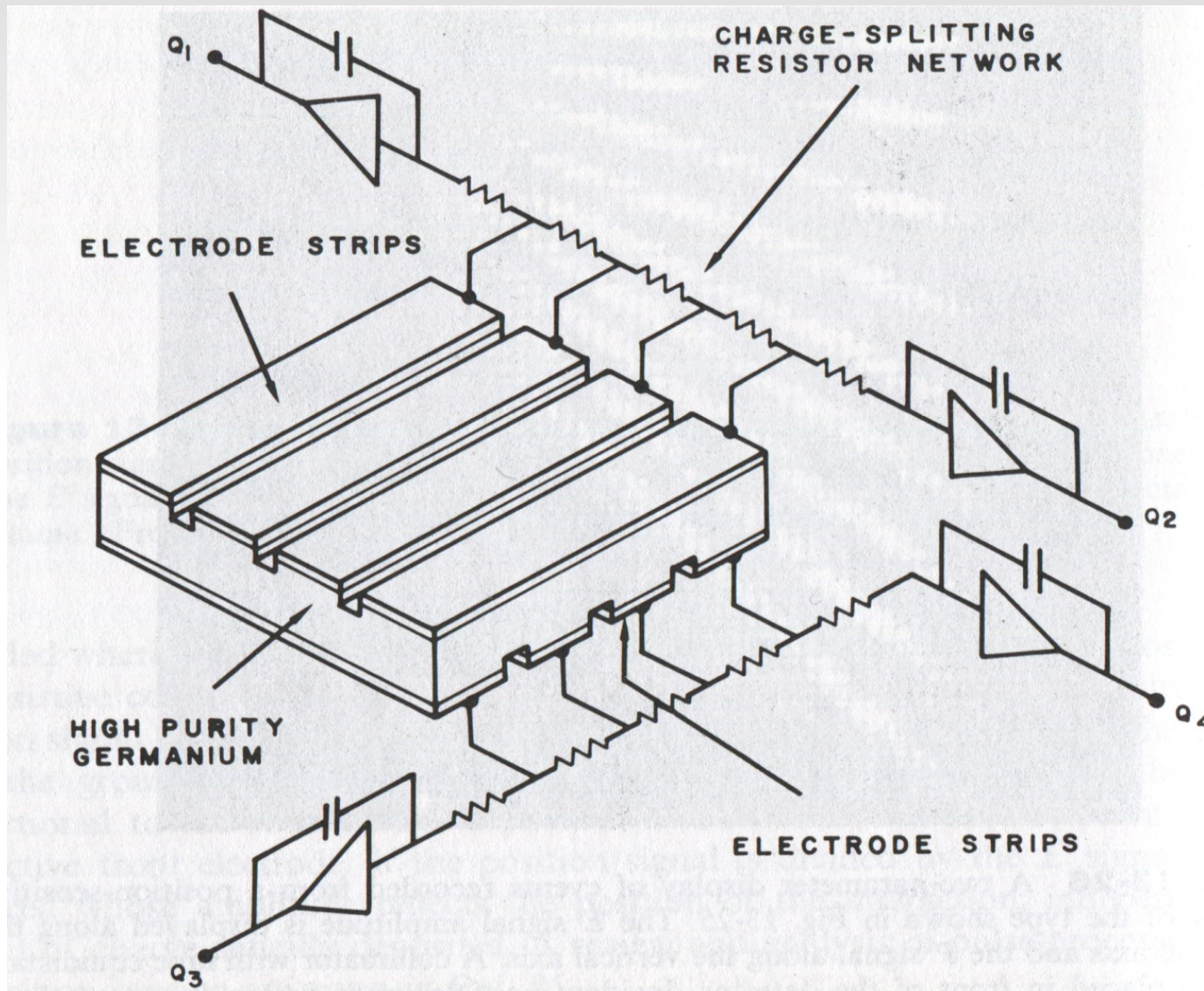


# Fig 4.28 Si-Streifendetektor (einseitig)



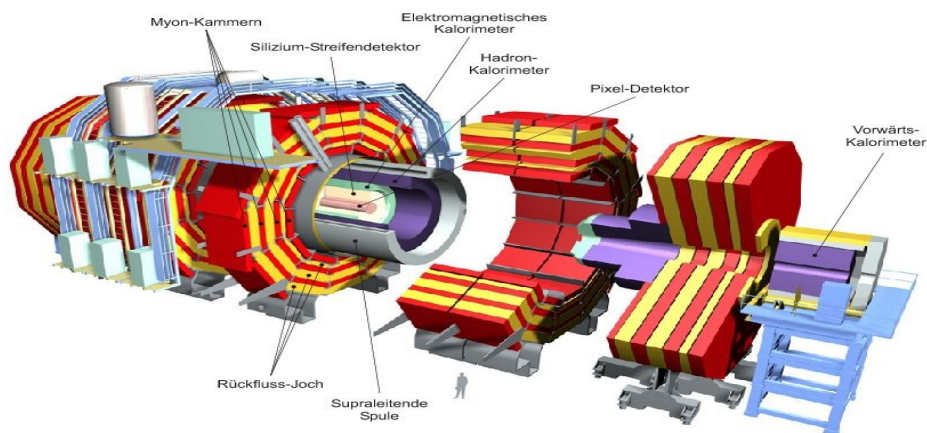
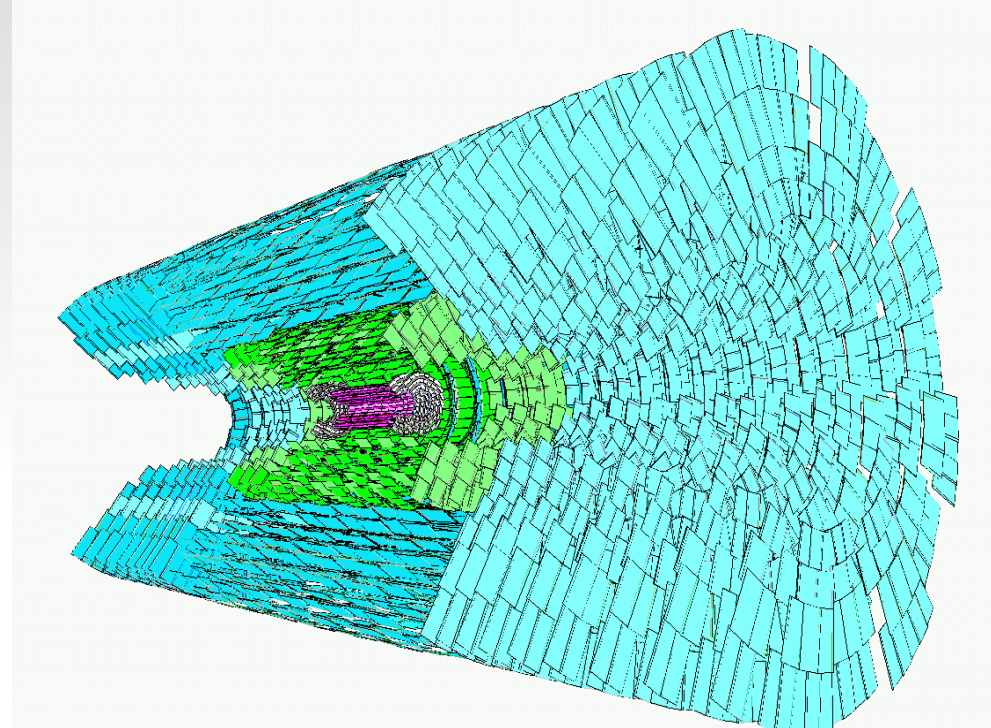
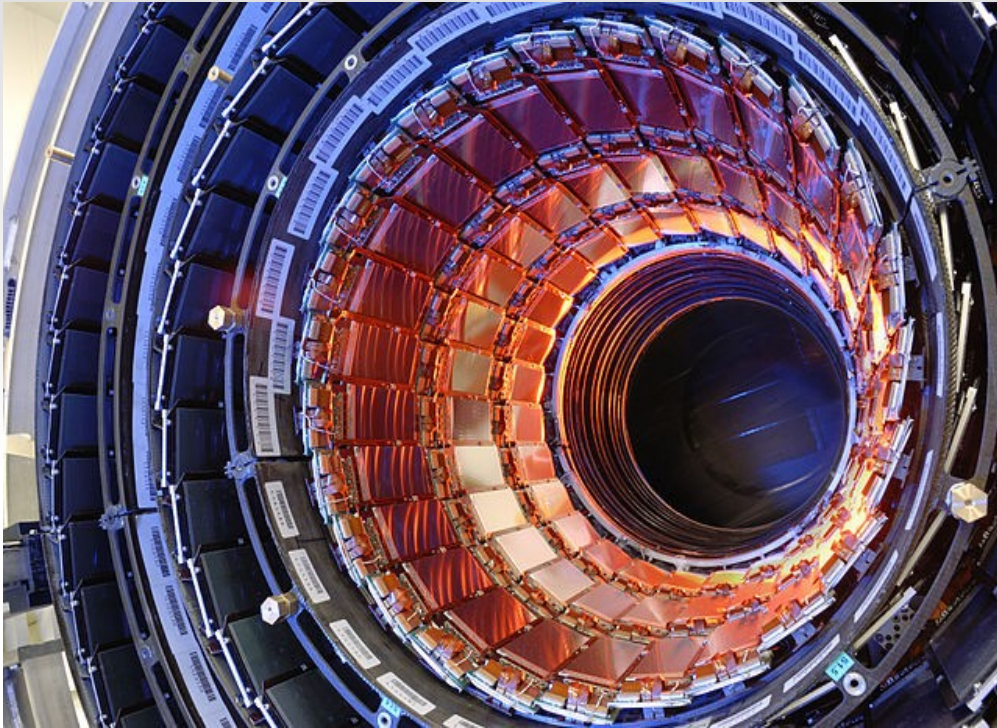


# Fig 4.29 Streifendetektor (zweiseitig)





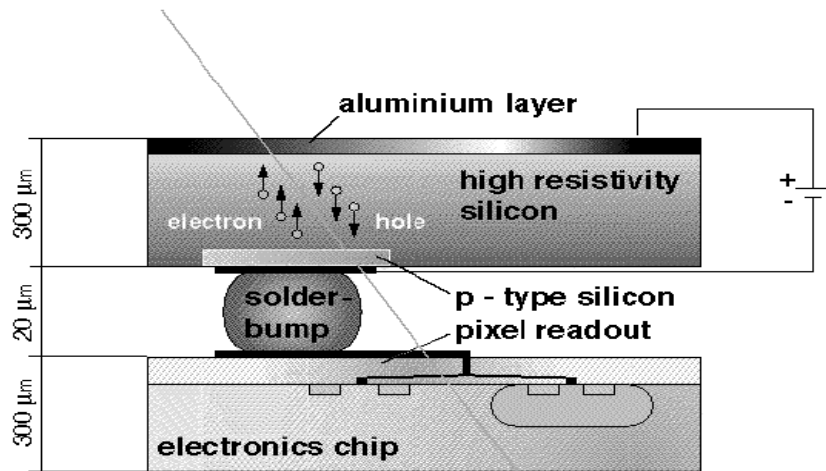
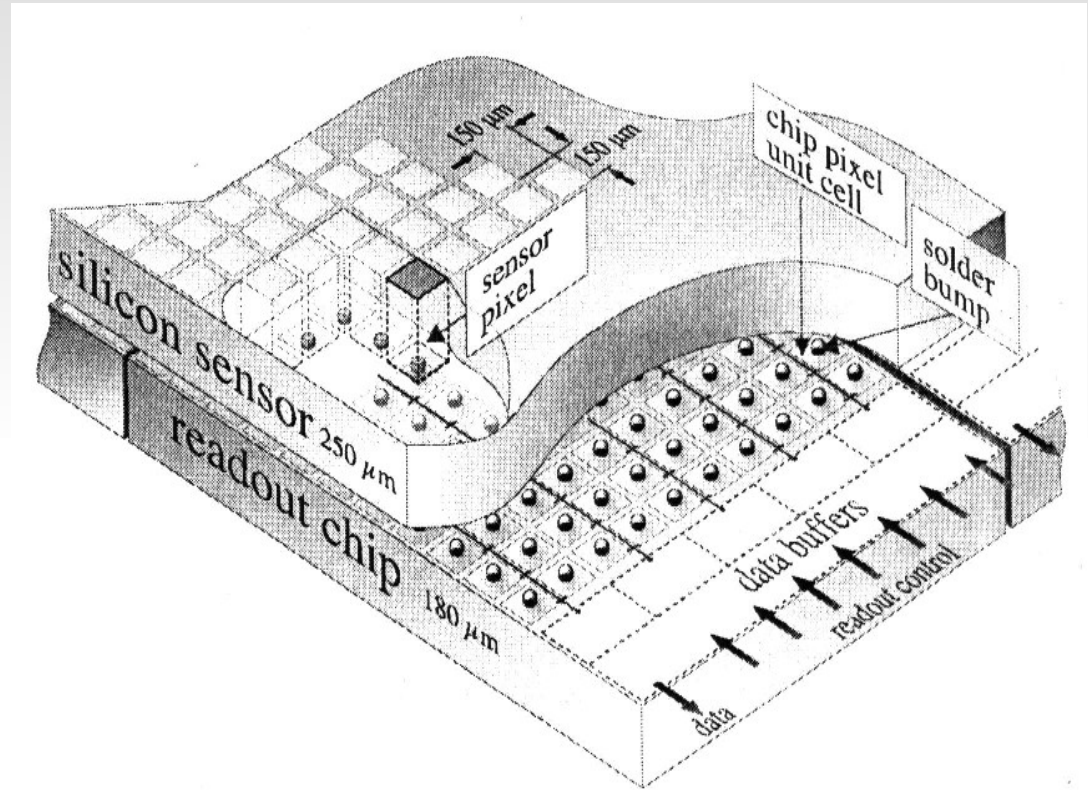
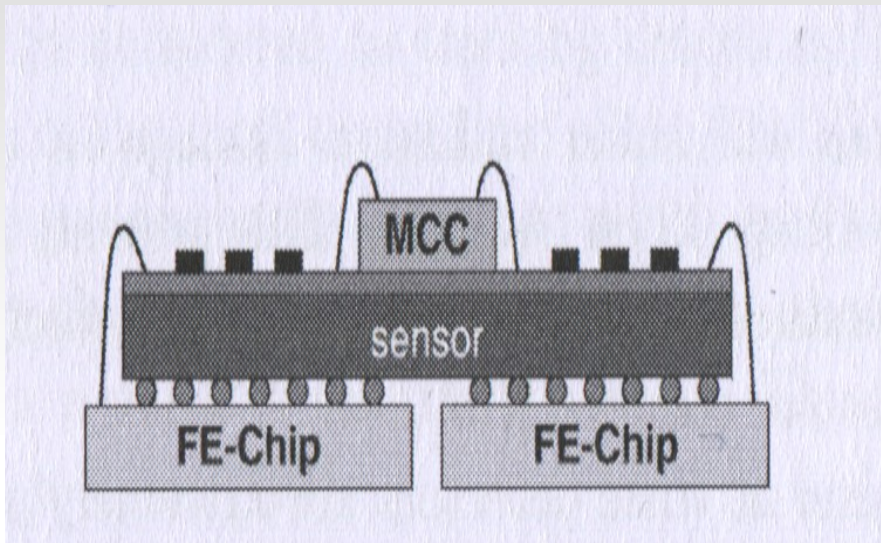
# Fig 4.29 CMS Tracker



**200m<sup>2</sup> Sensorfläche**  
**9Mio Kanäle**  
**Pitch 100μm, Streifenlänge 10cm,**  
**Sensordicke 300-500μm**  
**Ortsauflösung ~10μm**

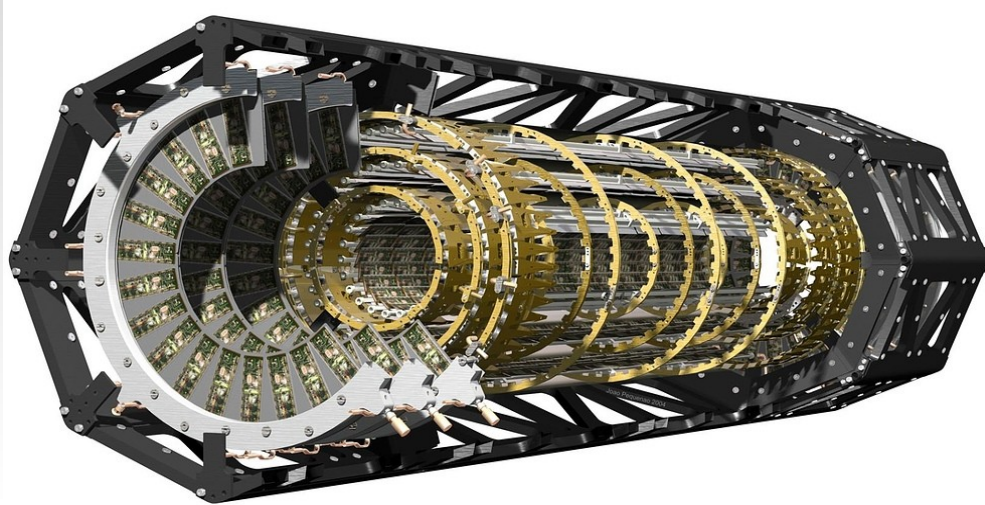


# Fig 4.30 Hybrid-Pixeldetektor

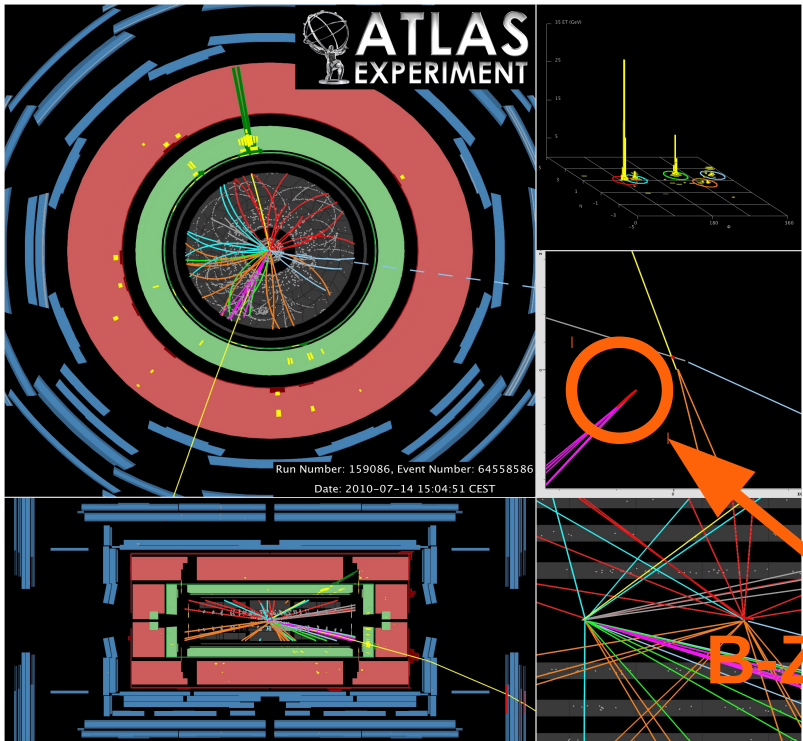
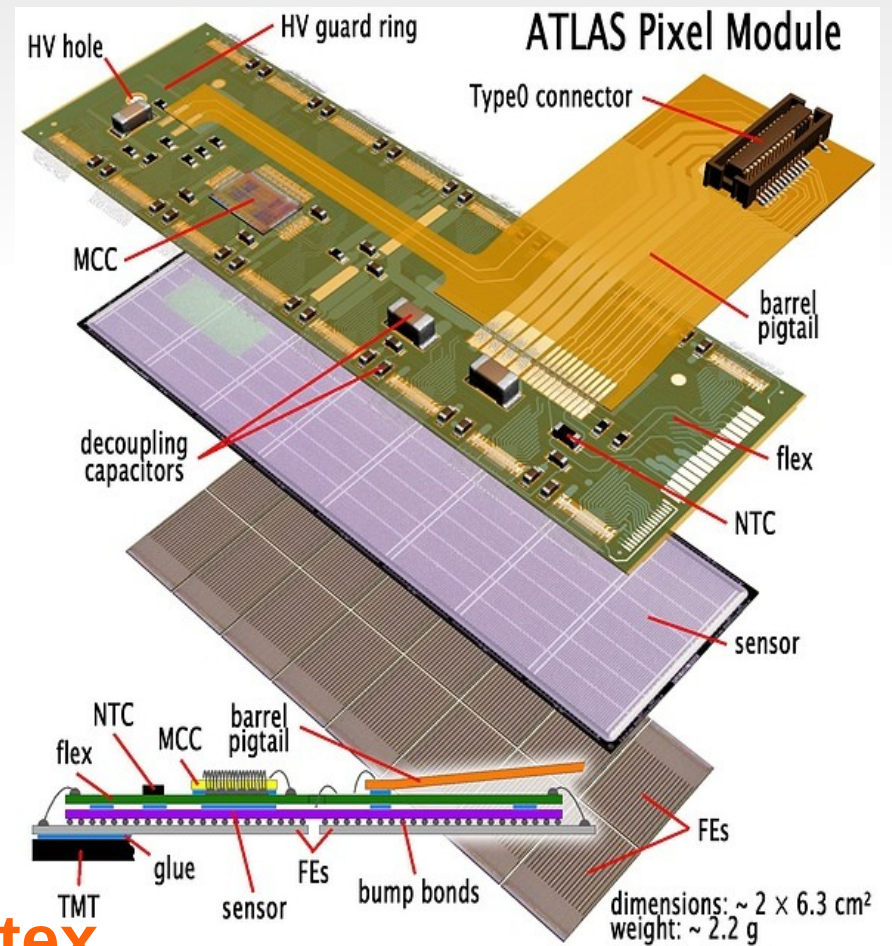




# Fig 4.31 ATLAS PIXEL

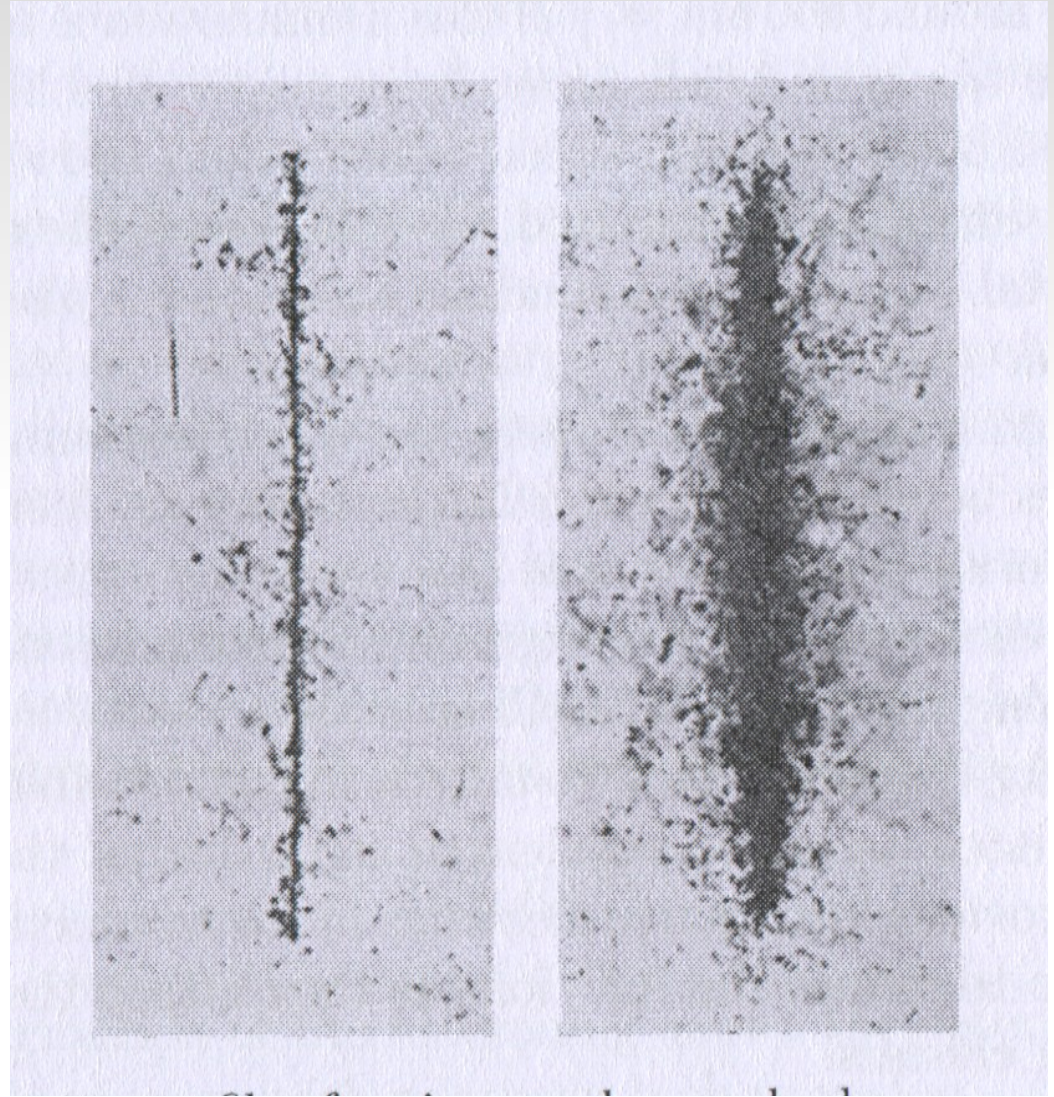
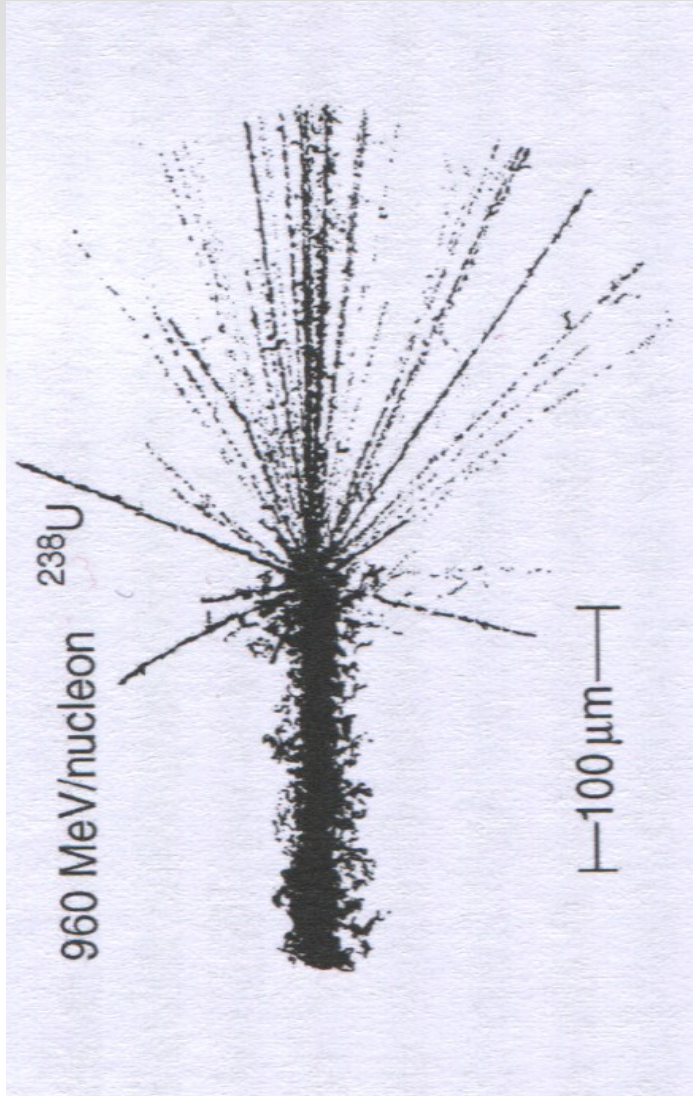


Sensor:  $16,4 \times 60,8 \text{ mm}^2$   
mit 46000 Pixeln  
Pixelgröße  $500 \times 400 \mu\text{m}$   
80 Mio Kanäle



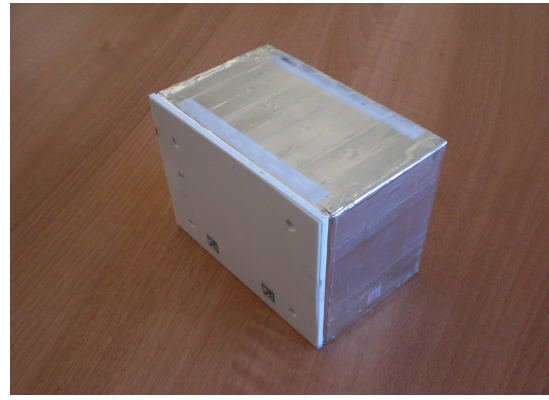
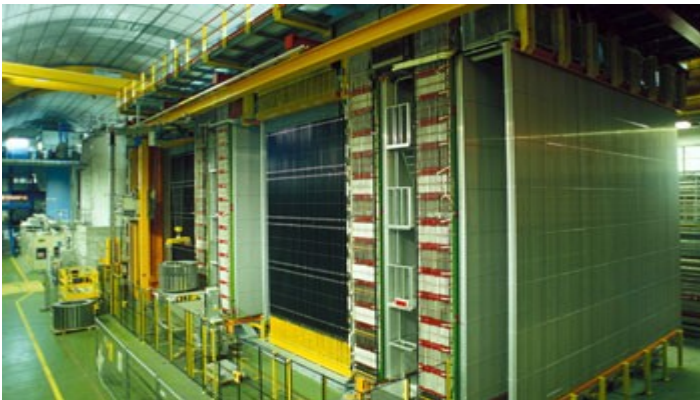
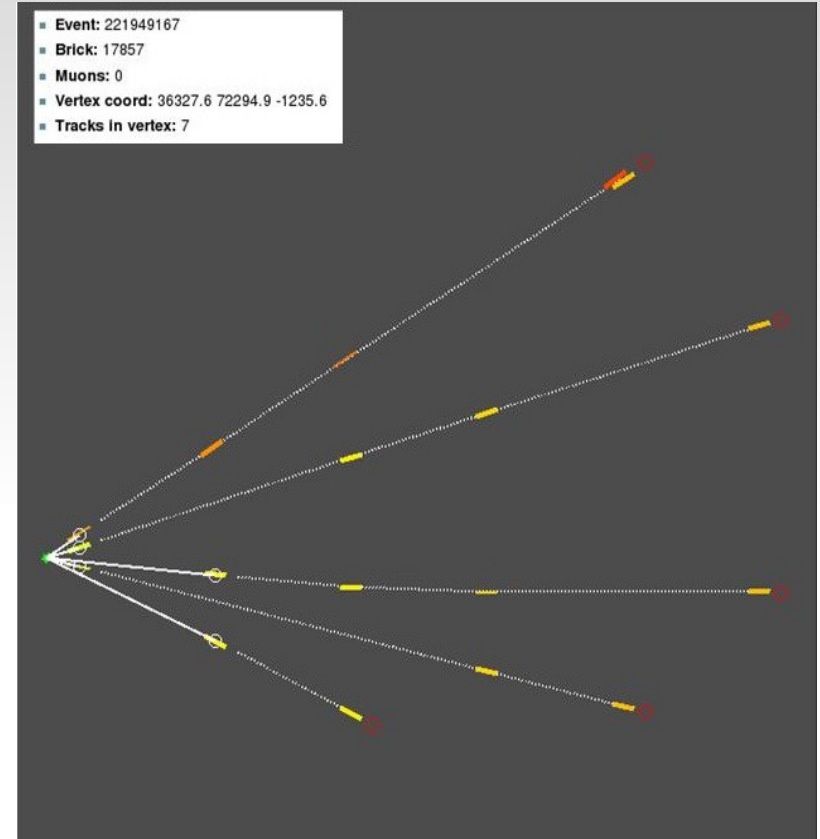
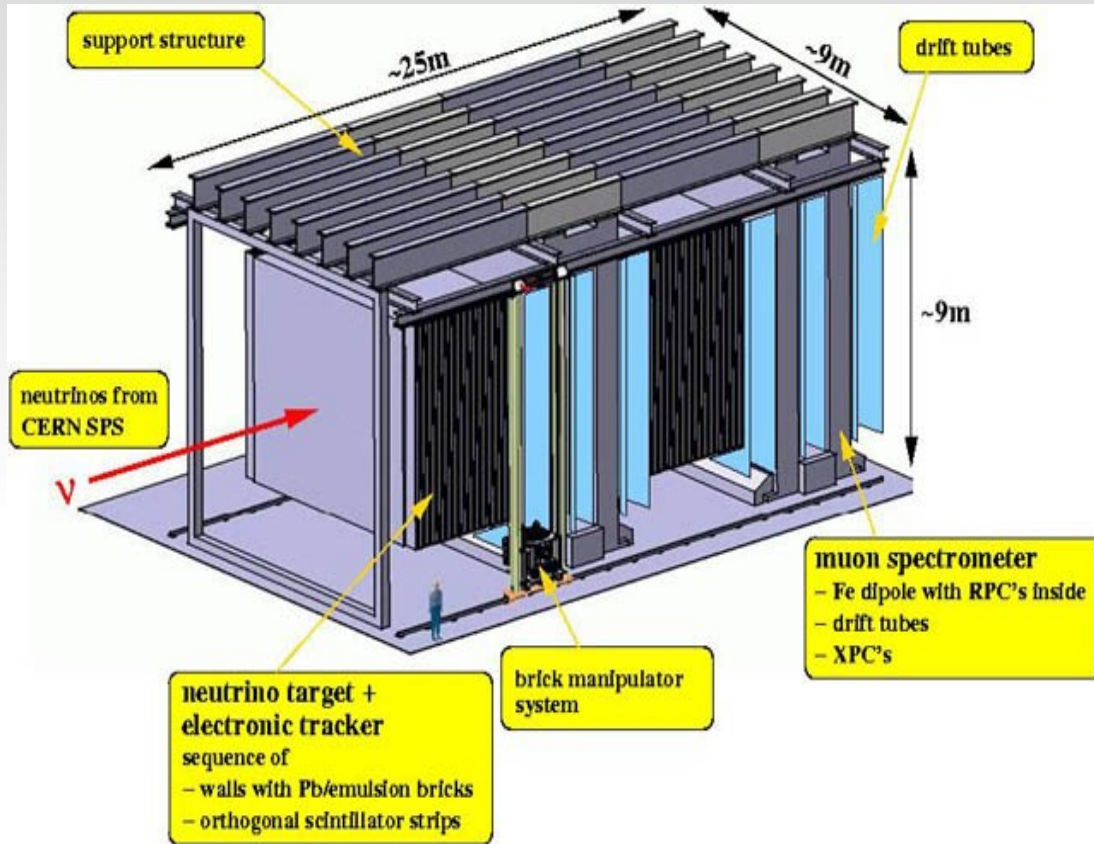


# Fig 4.32 Kernspuremulsion





# Fig 4.33 OPERA



**150.000 Bricks**  
**(Blei/Kernmulsion)**  
 $\tau$ -Zerfallslänge  $\sim 100\mu\text{m}$