MPGD - ECT

GEM-µRwell Test Beam 2024

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for

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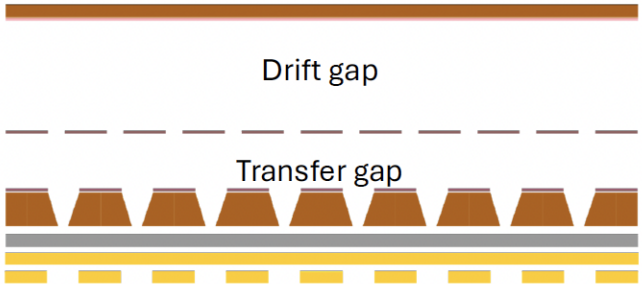
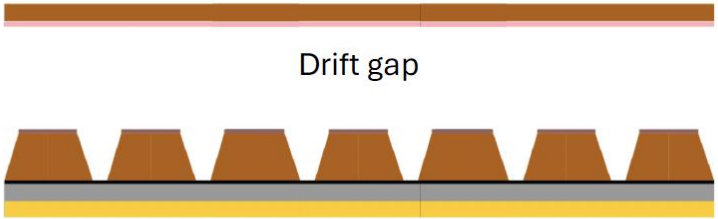
Test Beam 2024 Detectors

GEM- μRWELL

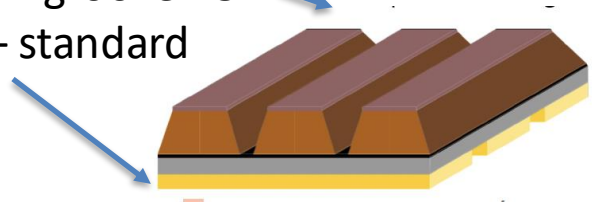


- 10 x 10 cm^2 active area
- 6 mm drift gap
- 3 mm transfer gap
- 400 μm strip pitch
- XY 2D readout COMPASS-like

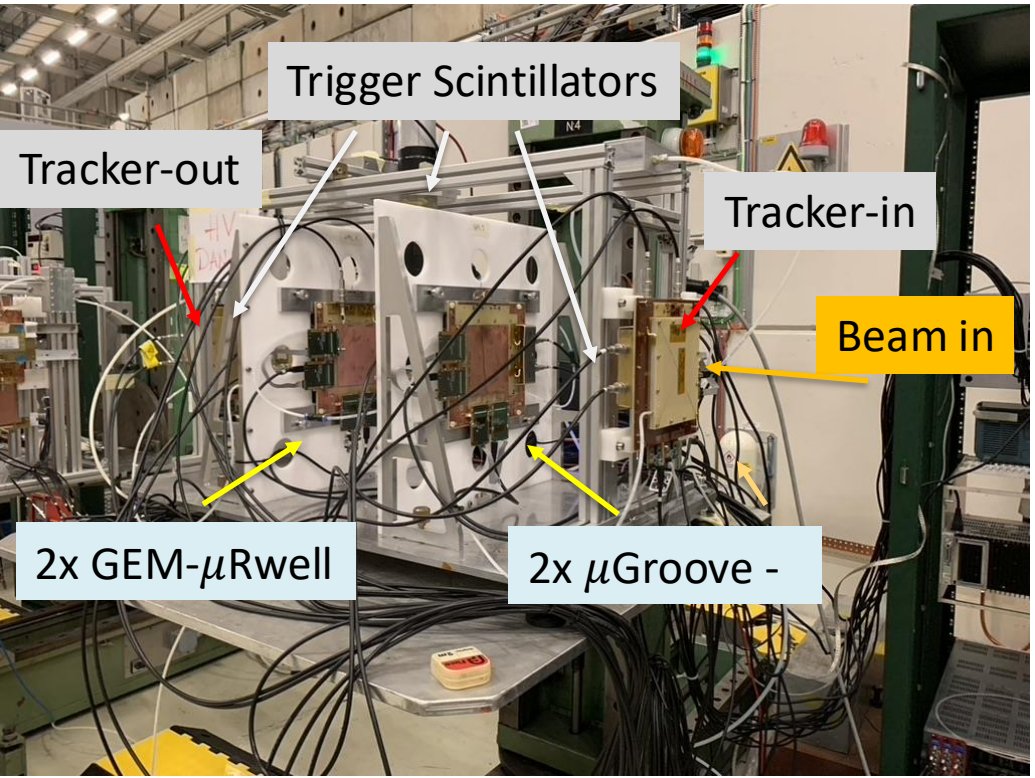
μGroove



- 10 x 10 cm^2 active area
- 6 mm drift gap
- 400 μm strip pitch (3x140 μm or 2x200 μm)
- Y coordinate on groove TOP
- X coordinate – standard



Test Beam Set-up



Tracker-In : μRwell – 3 mm drift
(a hybrid GEM- μRwell with GEM foil used as a cathode)

Tracker-Out : GEM-μRwell

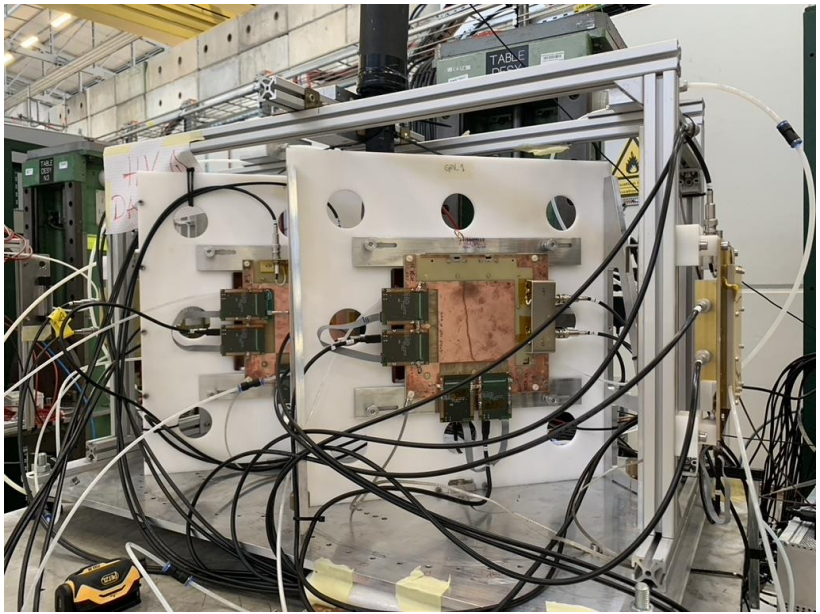
Detectors Under Study (DUT)

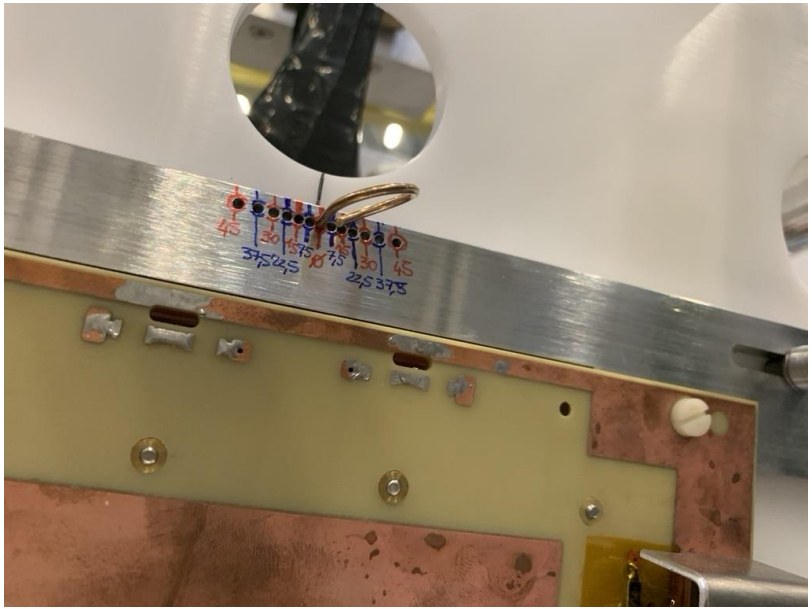
- in mirror configuration
  → "Enemy"

- 2 GEM- μRwell
- 2 μGroove

Detectors Set-up

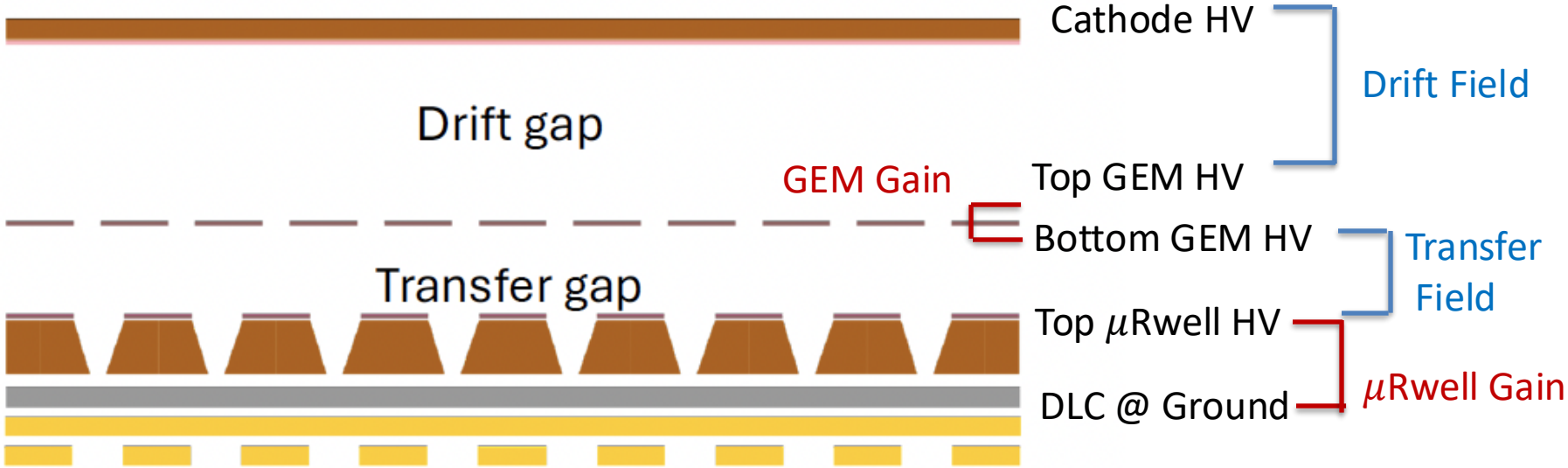
- DUT may be rotated to study their characteristics for inclined tracks.
- θ= 0°, 7.5°, 15°, 30°, 45°





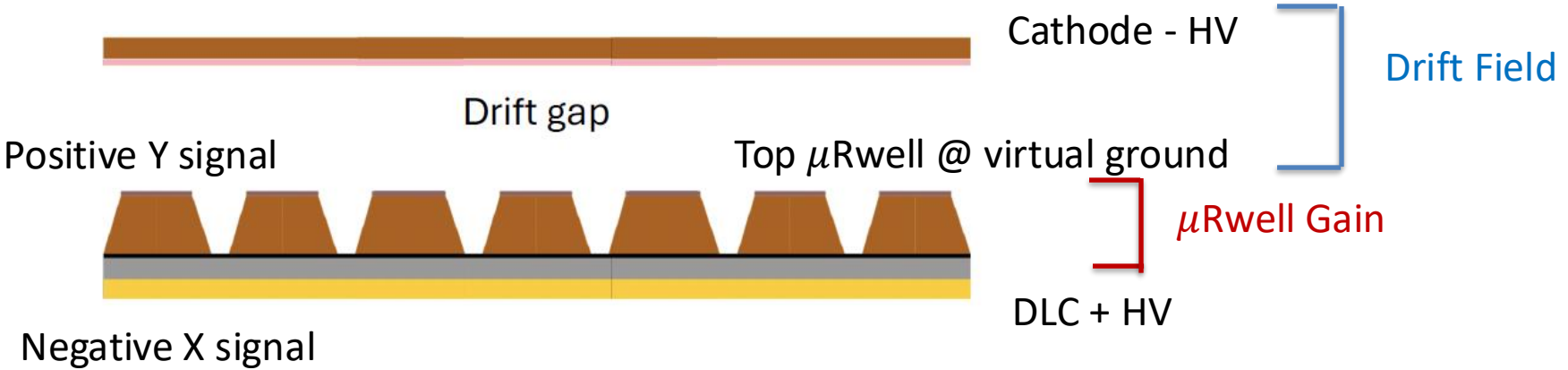
Detectors parameters

GEM- μRWELL



4 independent parameters to study: GEM gain, μRwell Gain, Drift Field, Transfer Field

μGroove



2 independent parameters to study: μRwell Gain, Drift Field

First preliminary results

GEM-μRwell: Drift field = 1KV/cm, Transfer Field=4 KV/cm, μRwell Gain = 1500 → GEM HV scan

Top Groove: Drift field = 1KV/cm → μRwell HV scan