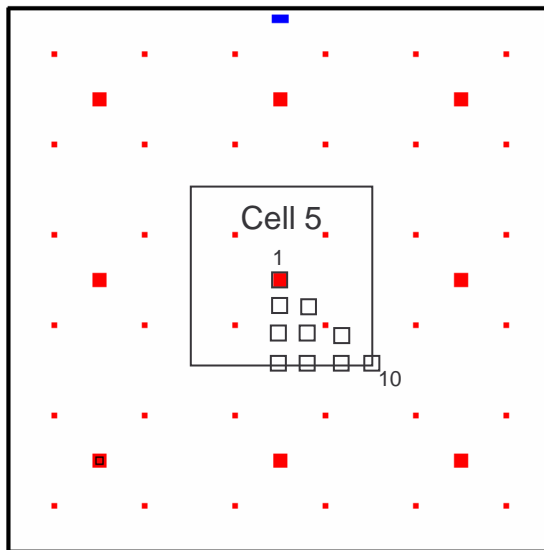# CALICE simulation results

G.Villani 06

Cell size: 50 x 50 μm^2

Epitaxial thickness: 12 μm

Diode location: S1/S4

Diode size: 0.9 x 0.9 μm^2

Nwell size: 3.5 x 3.5 μm^2

Cell 5

1

10

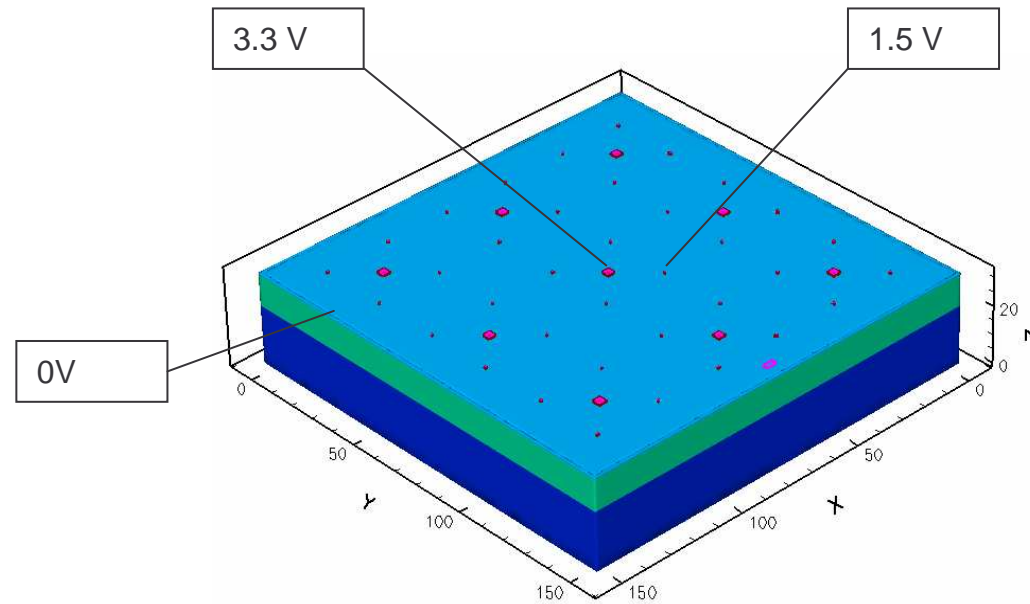**Bias**
- Diode : 1.5V fixed
- Nwell: 3.3V
- Pwell: 0V
- Subs: float

10 hits simulated: mirroring over central cell and transformation over 3 x 3 cells allows surface reconstruction of $Q_{coll}(x,y)$

CALICE simulation results

G.Villani 06
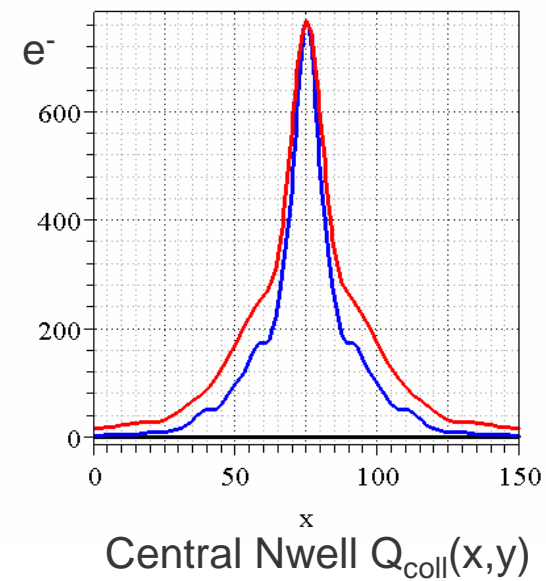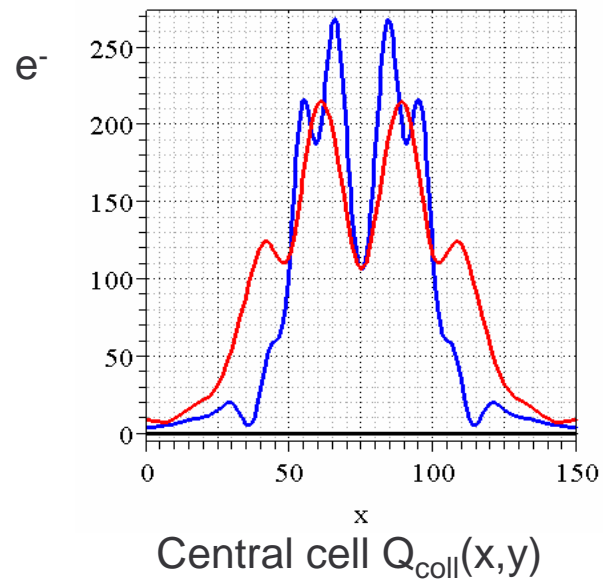
3.3 V

1.5 V

0V

• Cell size 50 x 50 μm^2
• Collecting diodes grouped and kept at fixed bias

CALICE simulation results

G.Villani 06

e⁻

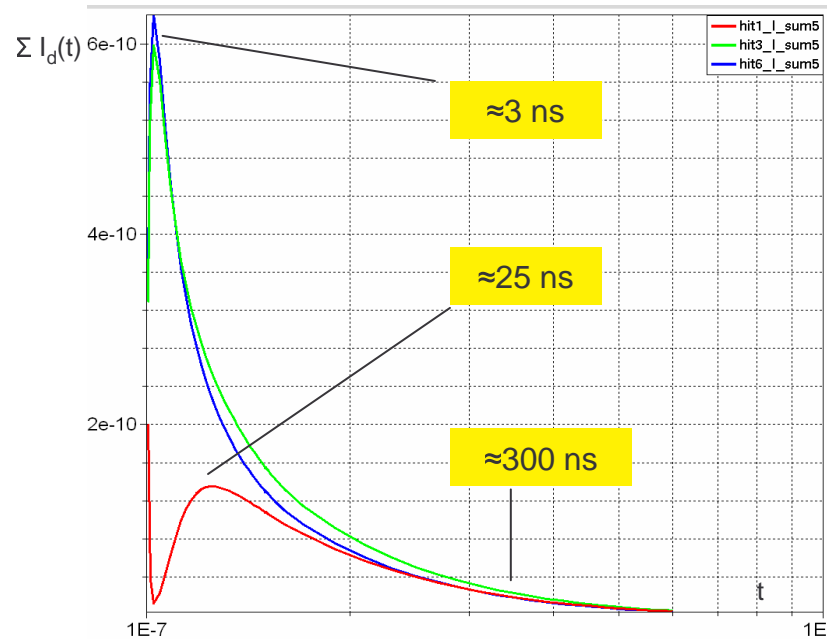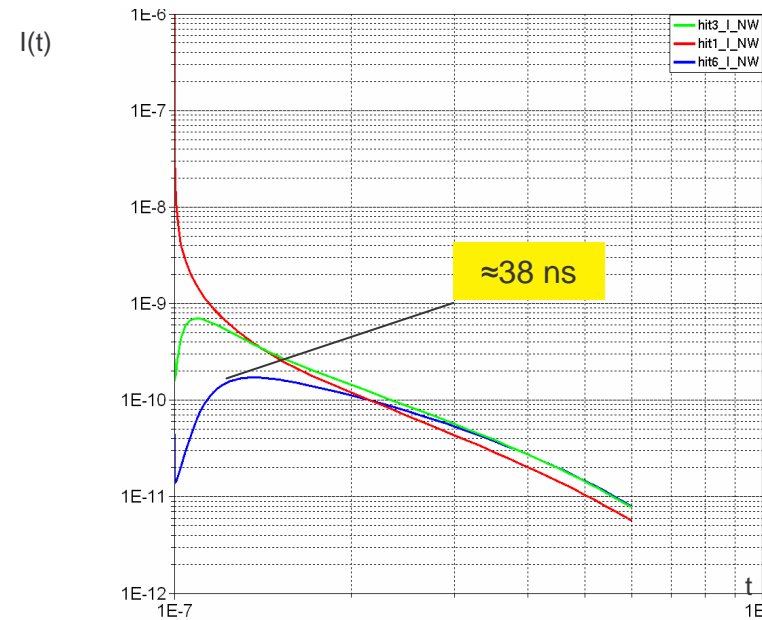Central cell Q$_{coll}$(x,y)

e⁻

Central Nwell Q$_{coll}$(x,y)

3

CALICE simulation results

G.Villani 06

Current transient

Central cell $\Sigma\, I_d(t)$ hit [1,3,6]

Central Nwell I(t) hit [1,3,6]

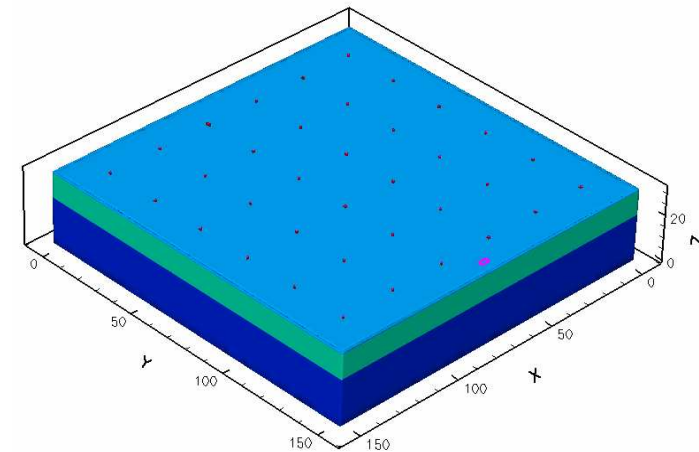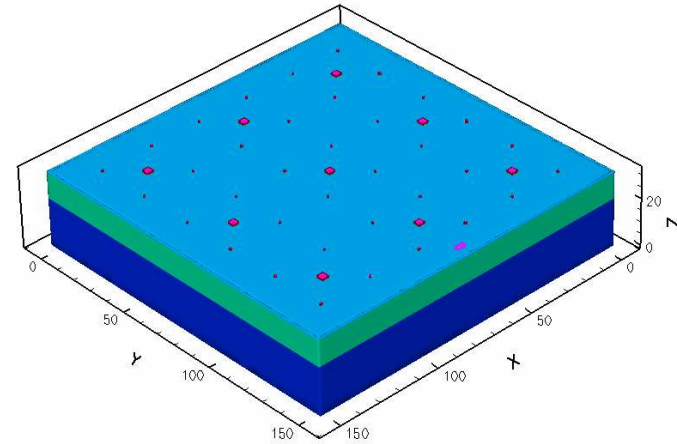Cell Max Peak current ≈ 0.65 nA

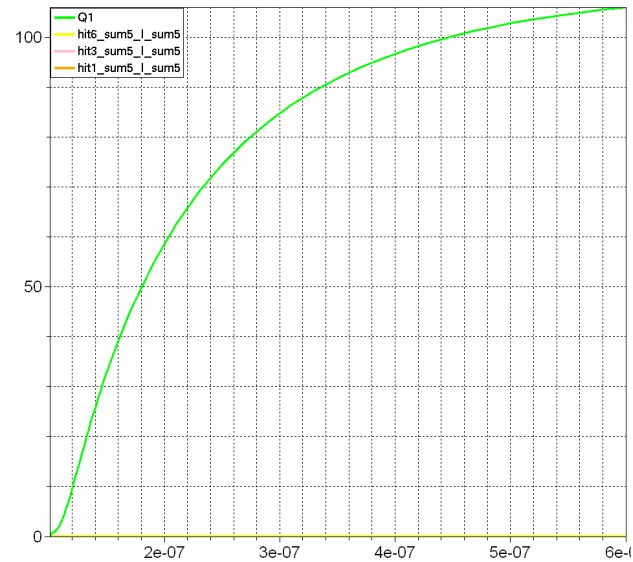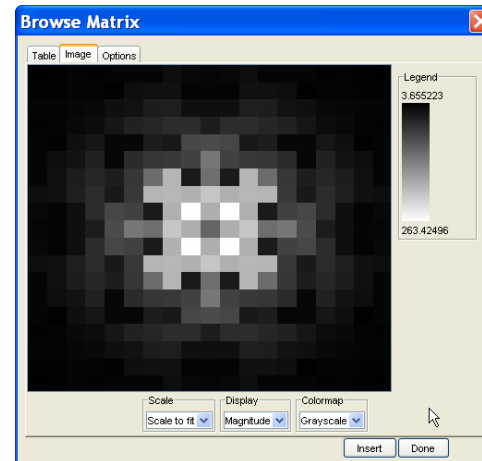Cell Min Peak current ≈ 0.2 nA

CALICE simulation results

G.Villani 06

Conclusions

- Maximum Σ charge signal ≈ 275 e⁻

- Maximum Σ current ≈ 0.65 nA

- Threshold settings might help, but to increase the number of collecting diodes seems advisable

- Comparison with same cell size no central Nwell in progress

addenda

- Charge collection transient hit 1 central cell

- Central cell Charge collected data matrix

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