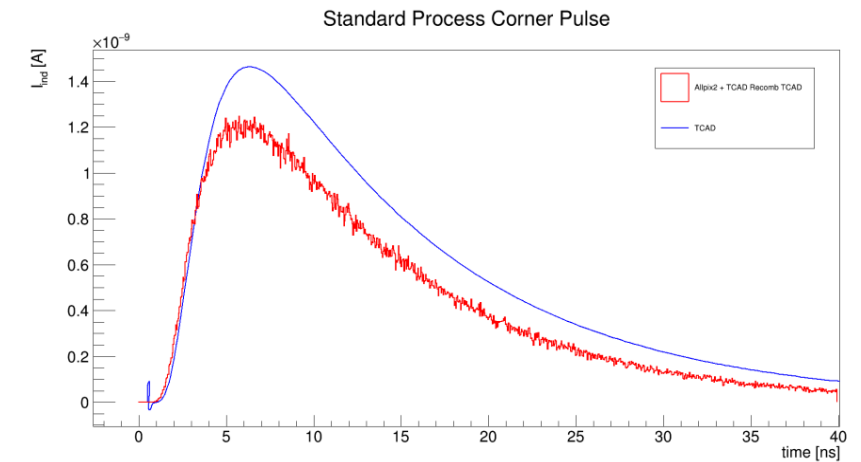
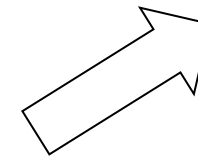
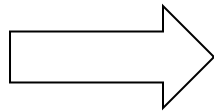
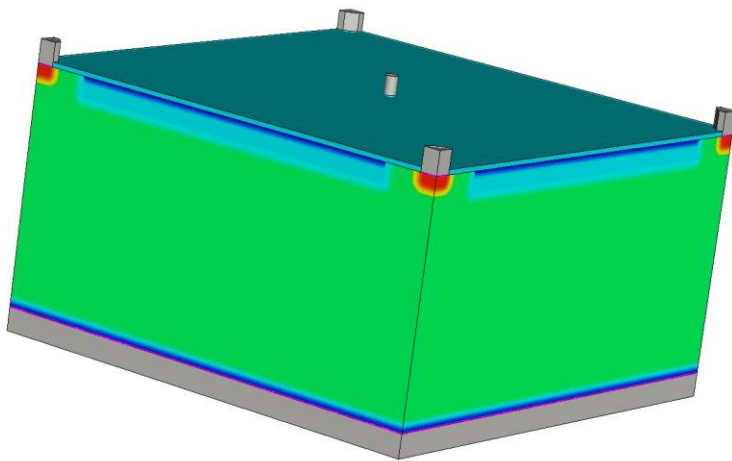


Tangerine: Allpix Squared + TCAD Simulations

Simulation of full detector response

- Allpix Squared (Allpix2) is a Monte Carlo simulation framework for silicon detectors
 - **3D electrostatic TCAD** simulations are needed to model electric field which is imported into Allpix Squared simulations
- **High statistics** and accurate field modeling



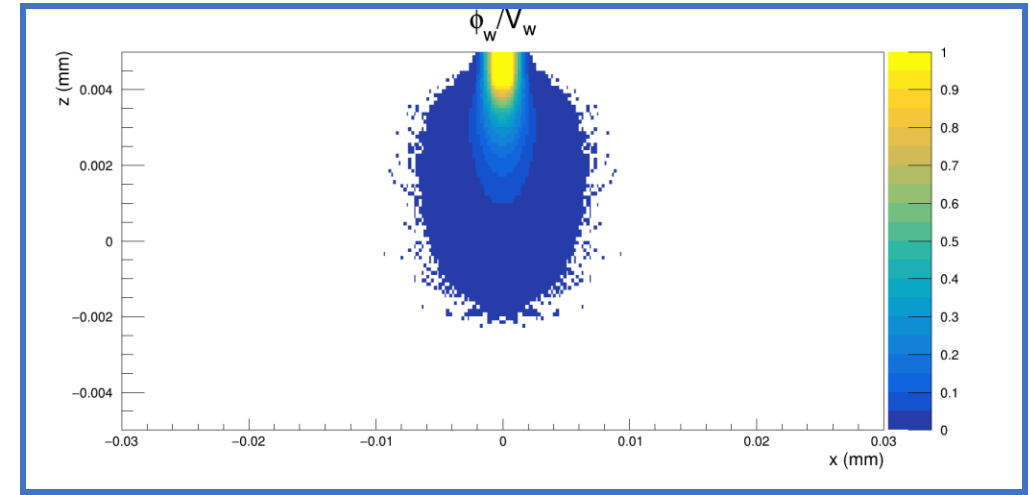
Many thanks to Anastasiia Velyka,
Adriana Simancas!

Tangerine: Transient Simulations

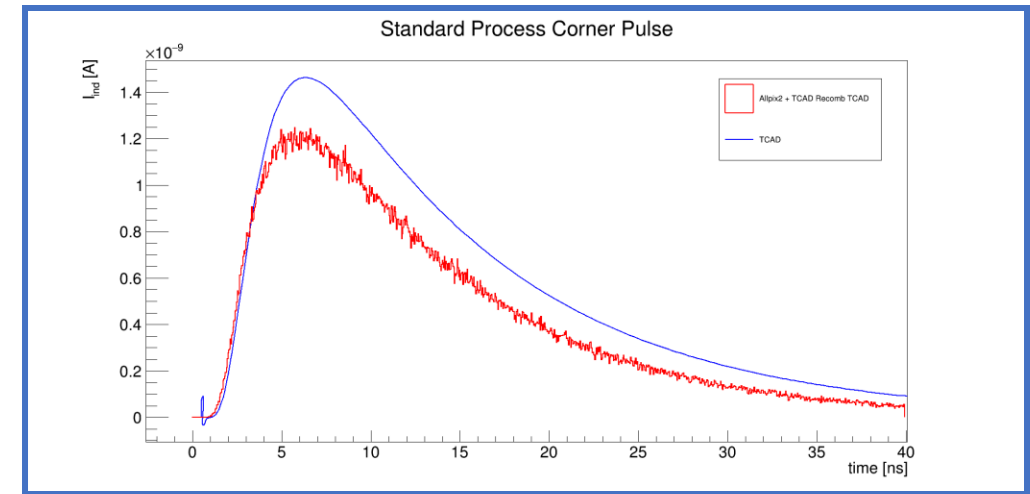
Validation Allpix Squared + TCAD simulations

Same simulation conditions as in transient TCAD are replicated:

- Charge carriers are injected along a straight line at the pixel corner (**DepositionPointCharge** instead of deposition with Geant4)
- Only the epitaxial layer (**10 μm**) is simulated
- Fixed amount of charge carriers (no Landau fluctuations and no secondaries) : **60 charge carriers / μm**
- Simulation repeated **1000x** and mean current pulse is computed
- Comparison between different layouts (**Standard, N-Blanket and N-Gap**)



Weighting Field of a single pixel
(Standard Layout)



Comparison between Pure TCAD
and Allpix2 + TCAD
(Standard Layout)