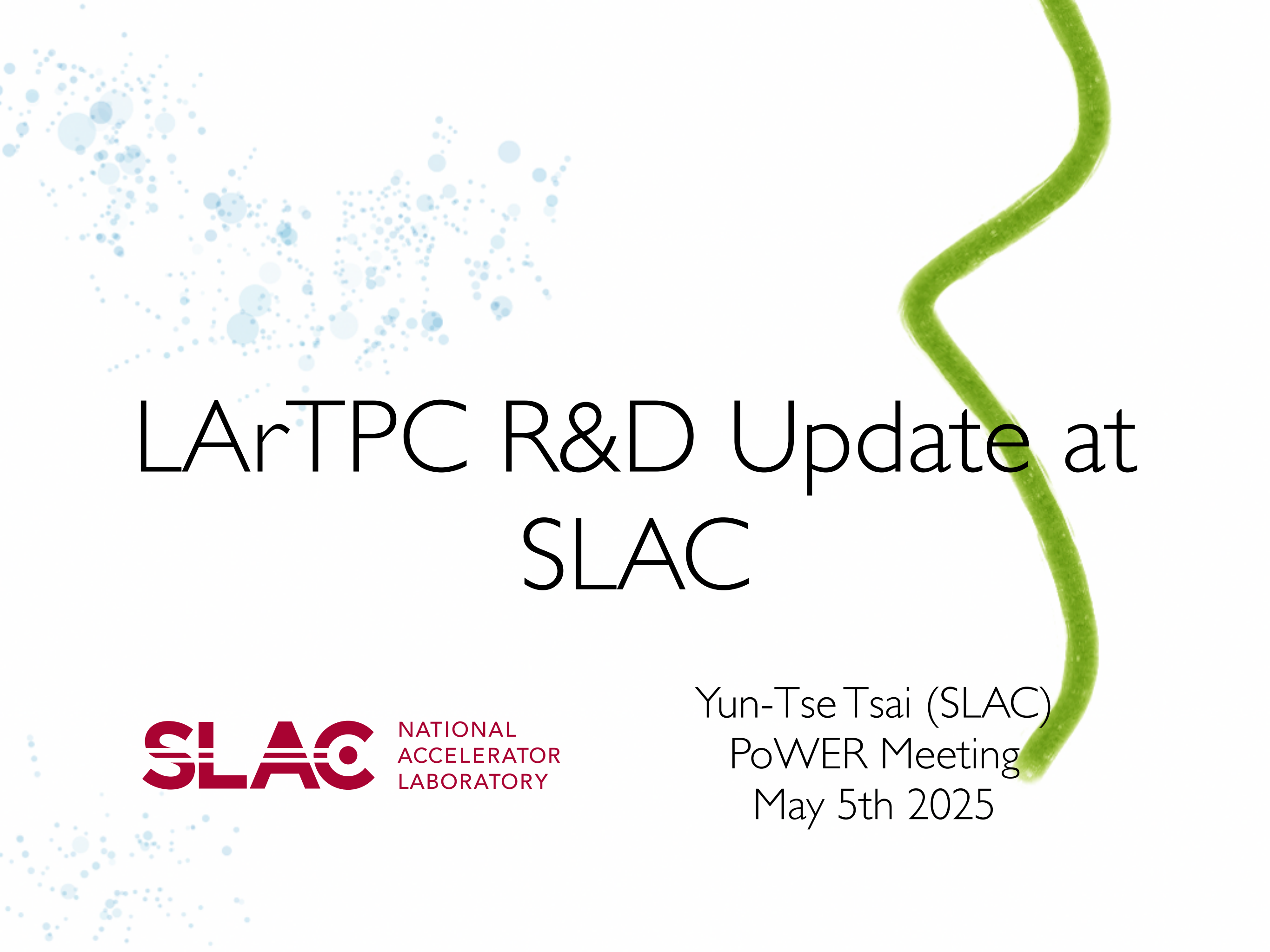




LArTPC R&D Update at SLAC

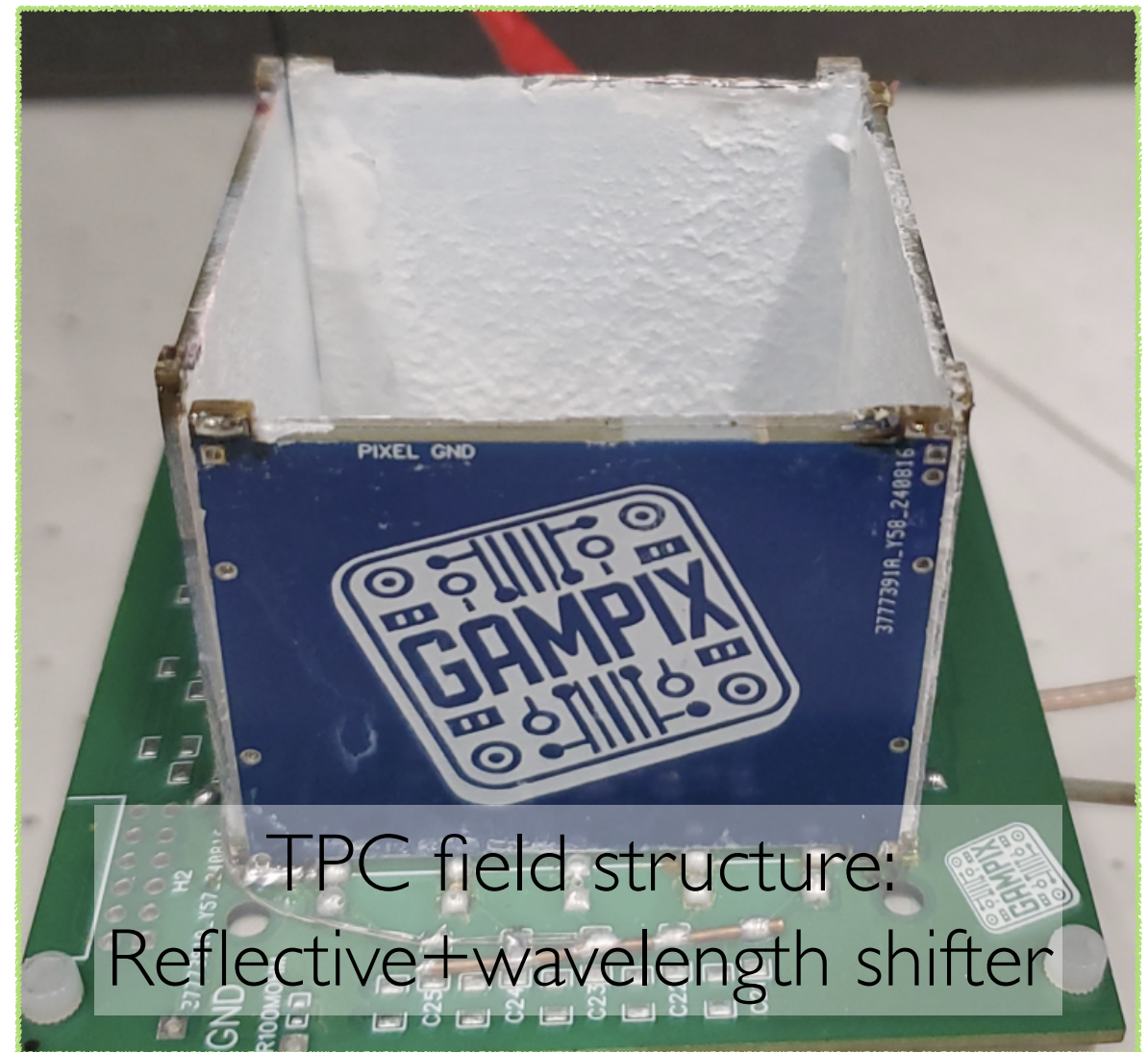
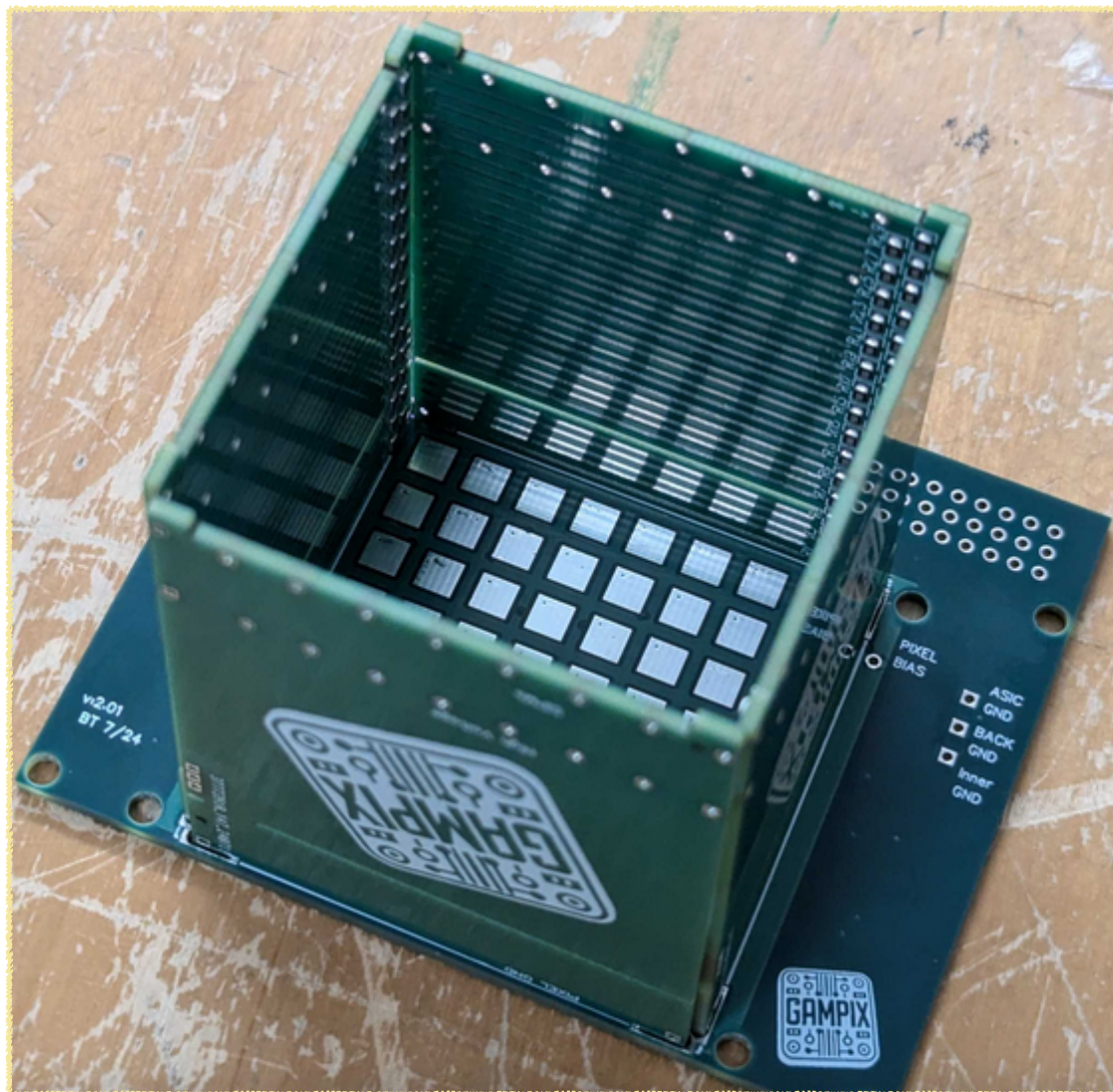


Yun-Tse Tsai (SLAC)
PoWER Meeting
May 5th 2025

LArTPC R&D Status

Dual Charge Readout: GAMPiX

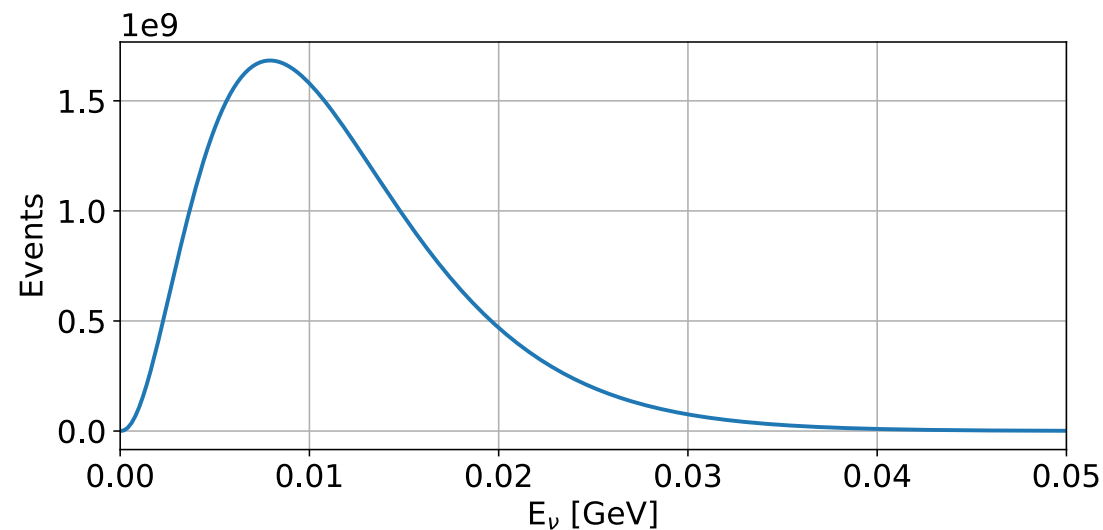
Light Trap for Modular TPC



TPC field structure:
Reflective + wavelength shifter

Aim for MeV-scale particles: physics motivation and more details presented at PoWER kick-off meeting

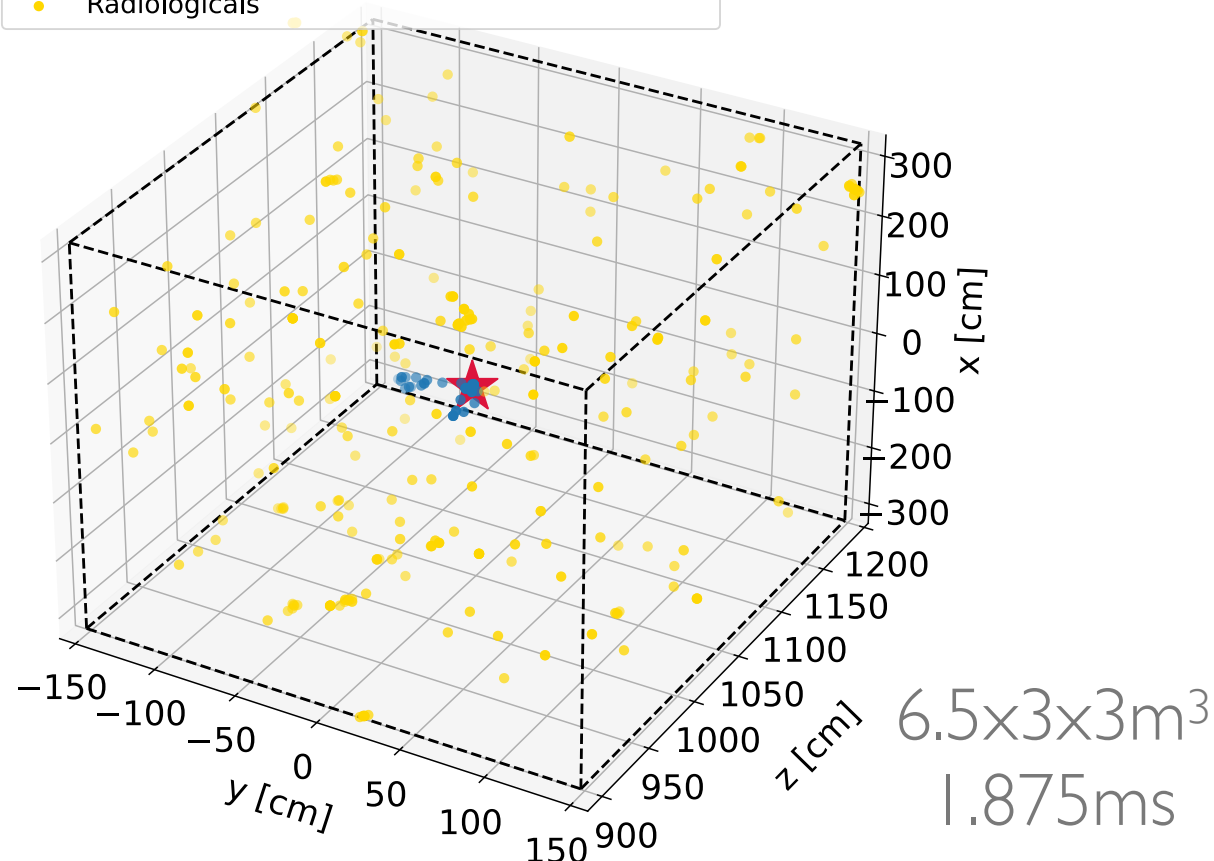
Supernova ν + Radiologicals



• Supernova neutrino
• Radiologicals



Interaction vertex



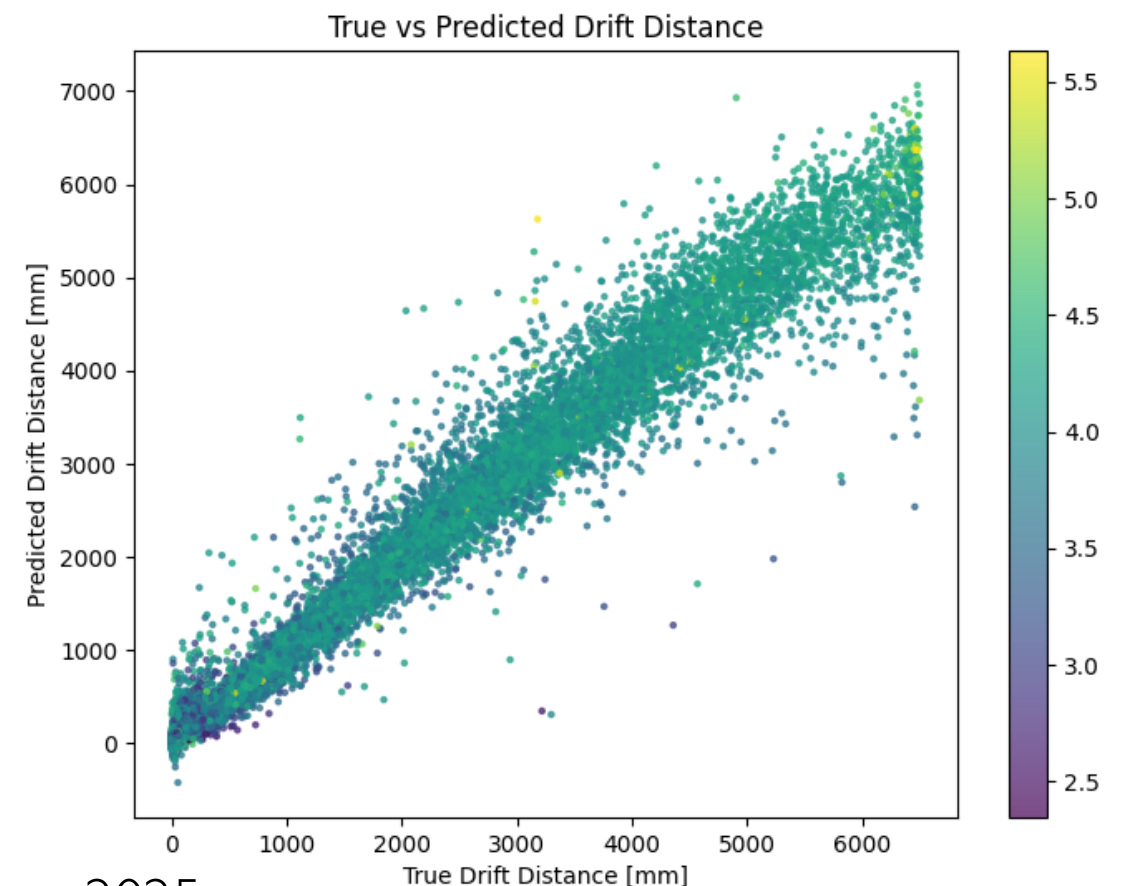
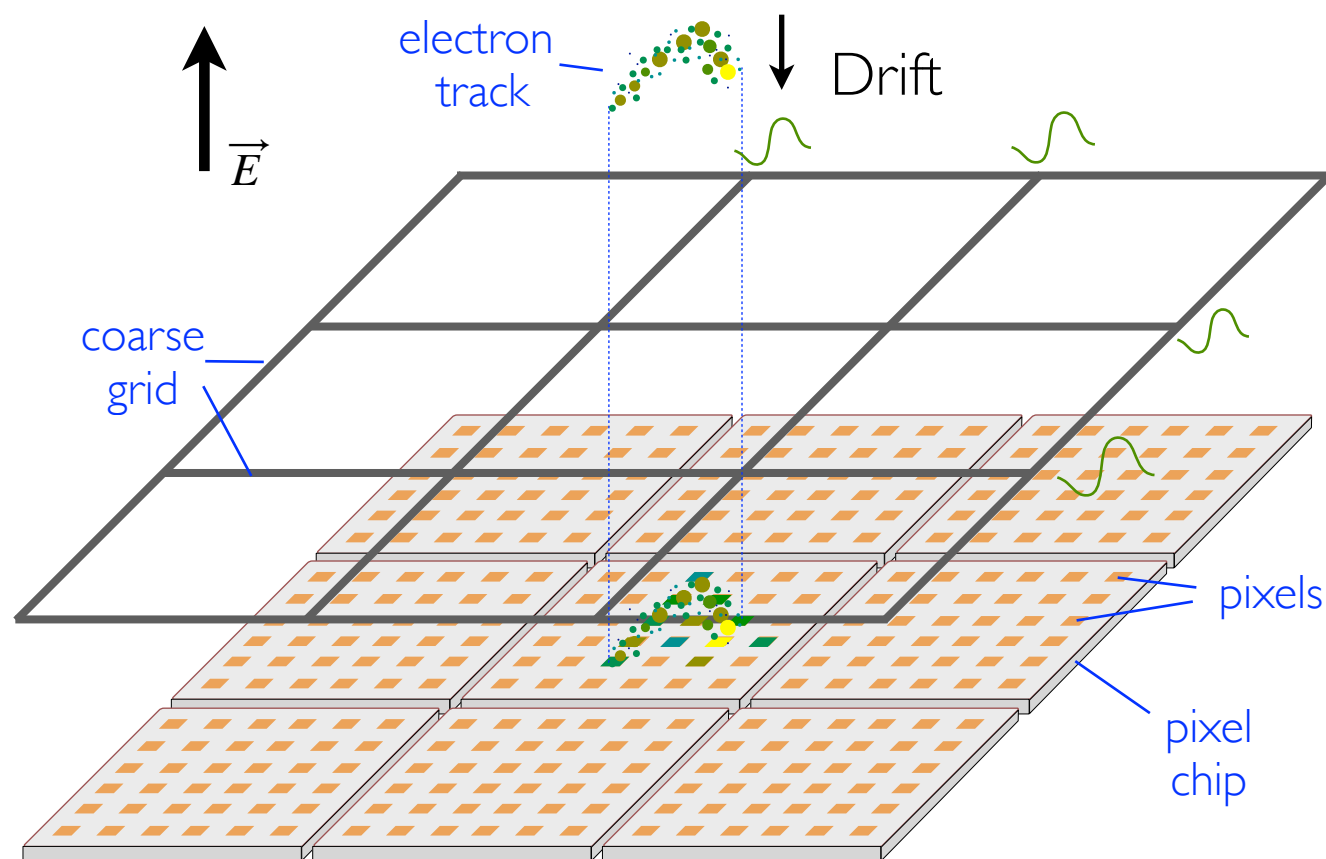
- Garching supernova neutrino ν_e flux
- Normal mass ordering
- DUNE official radiological sample for VD 1x8x14
- Upper module, full drift distance, 6.5m
- Include cavern γ , n
- 25cm LAr above upper charge readout plane (CRP)
- Thanks to Juergen Reichenbacher & Gleb Sinev!!

Drift Length Analysis

GAMPix: **G**rid **A**ctivated
Multi-scale **P**ixel readout

Use the coarser grids/wires
to trigger the finer pixels

Combine the signals on the
coarser grids/wires and finer
pixels to obtain fine tracking,
calorimetry, drift distance, etc.



LAr Recirculation

Start building LAr repurification system together with XLZD this summer

