LGADs at ORNL

Friederike Bock & Constantin Loizides

ORNL

February 3, 2021
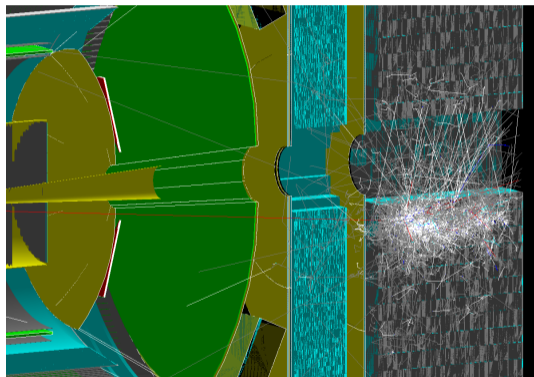
Timing layers (2-4) in front of emZDC

$\rightarrow$ To distinguish different prim & secondary vertices

$\rightarrow$ At the same point pre-shower detector - similar as envisioned for FoCal

Tracking and timing layers (2-4) before forward ECal and in between forward E- & HCal

$\rightarrow$ extend/improve tracking capabilities to higher η

$\rightarrow$ partial shower evolution tracking (between E- & HCal) - improved particle flow

- Currently in the process of building up a team to join CMS-ETL efforts related to:
  - readout-design (after ASICS)
  - mechanical design
  - bump bonding
  - module/array testing & timing resolution validation

- Part of eRD29 with 1-2 physicists mainly for simulation effort

- Expertise on read-out designs and construction for sPHENIX-MVTX, ALICE-ITS2 & ALICE-TPC

LGAD timing layer in forward direction well integrated with general efforts detailed by ORNL in EOI on tracking, calorimetry and streaming read-out.