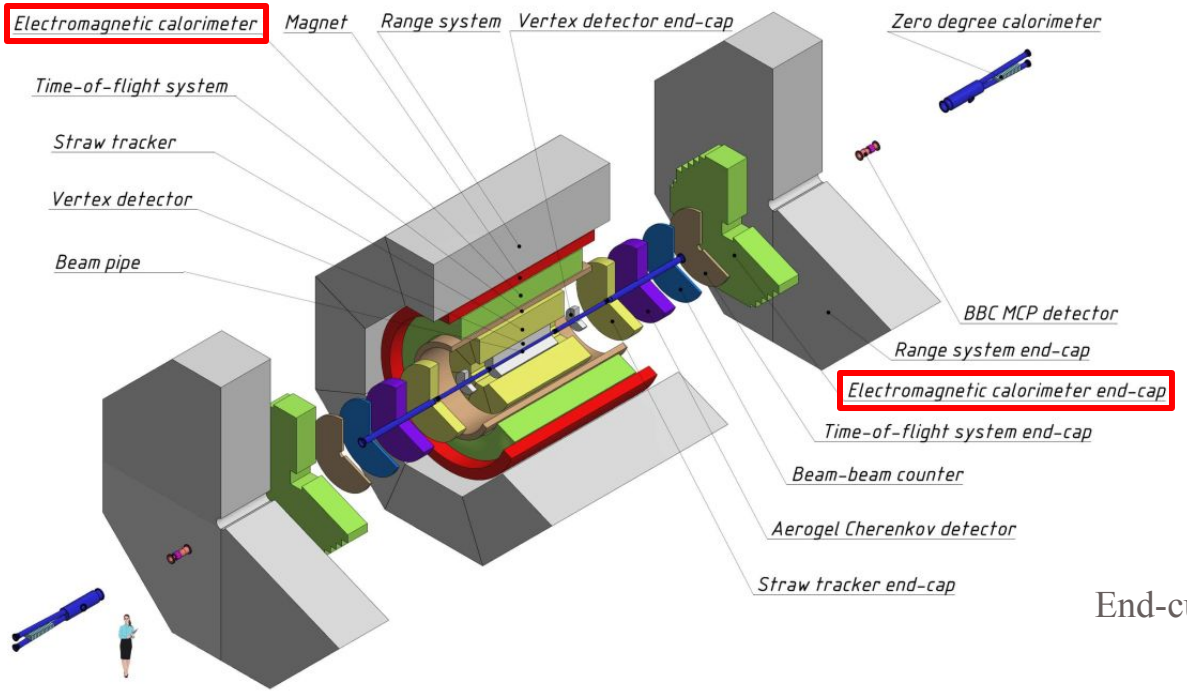
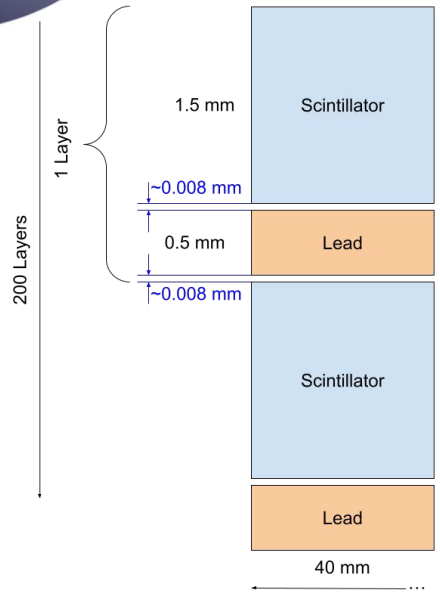
ECAL Simulation in Sampo

I. Zimin, L. Simbiriatin

Electromagnetic Calorimeter (SPD)



End-cup





ECal in Sampo

Generators

Geant4

ECalMCSteps

Generator of the parametrization function (standalone MC model of ECal cell)

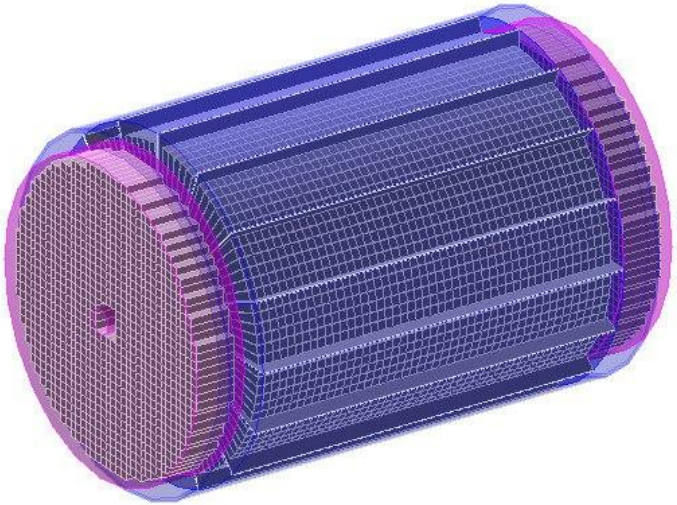
Simulation

ECalMCHit MakerAlg

ECalMCHits

ECalDigiMakerAlg

ECalDigis



Now we are here!

Reconstruction

ECalRecoHit MakerAlg

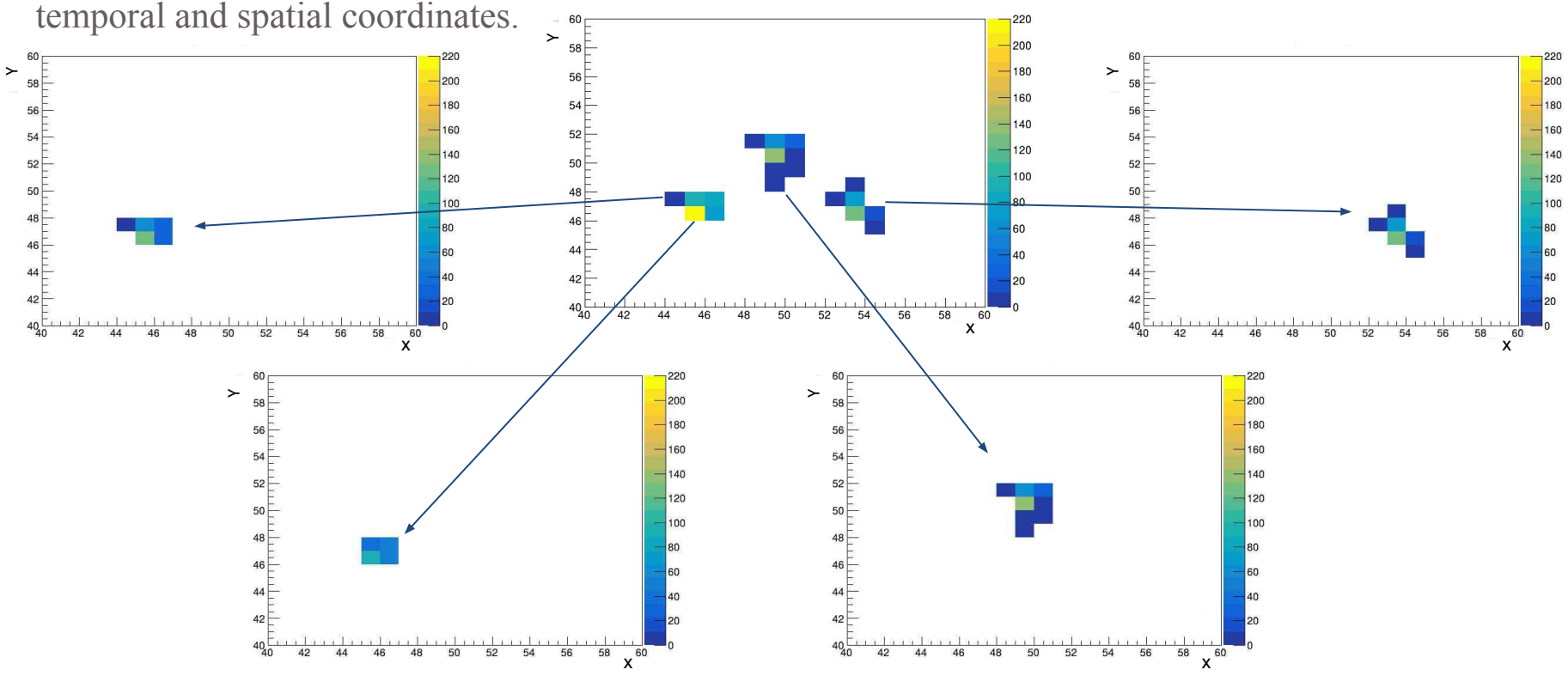
ECalRecoHits

ECalCluster MakerAlg

ECalClusters

Analysis

PreclusterFinder is responsible for grouping signals from cells into preclusters based on temporal and spatial coordinates.

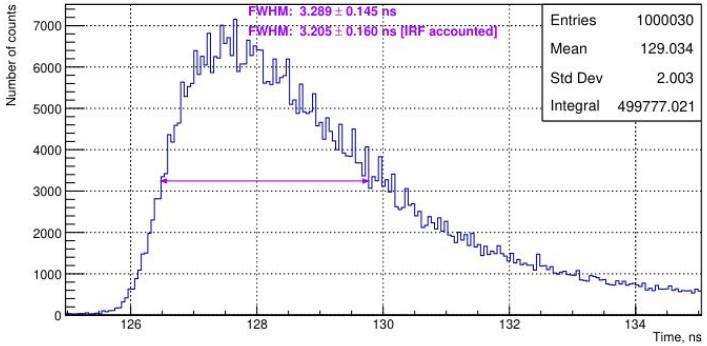


Some Sampo updates

- The Birks constant for the ECal scintillators has been added (acknowledgement to V. Ivanchenko).
- “Magic numbers” have been eliminated, and now we use GeoManager to get information about ECal geometry.
- The parametrization file has been moved to CVMFS.
- Several code improvements were made.

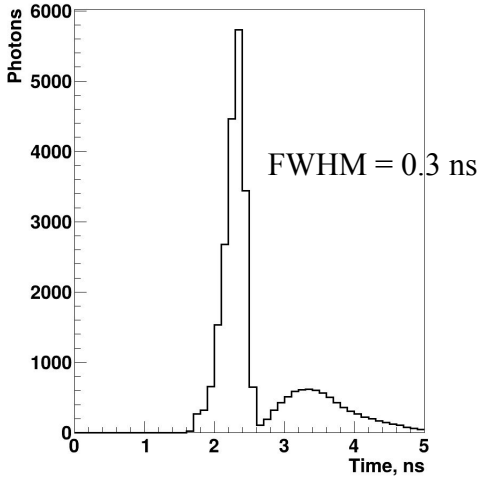
Standalone model

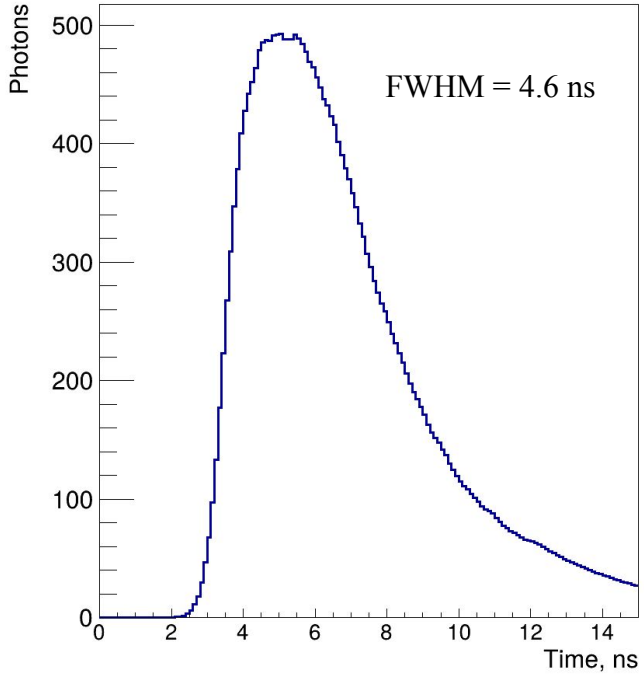
Scintillation in the scintillation plate



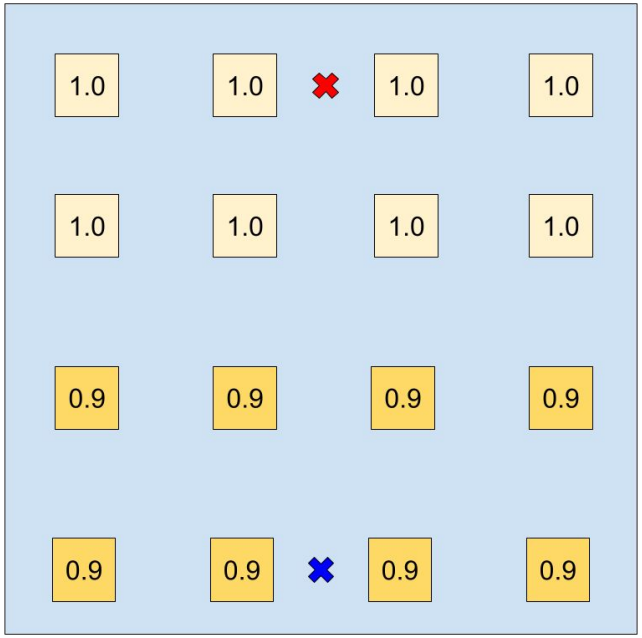
Data provided by N. Anphimov et al.

Delayed signal by the WLS fiber light guide with the mirror without scintillation

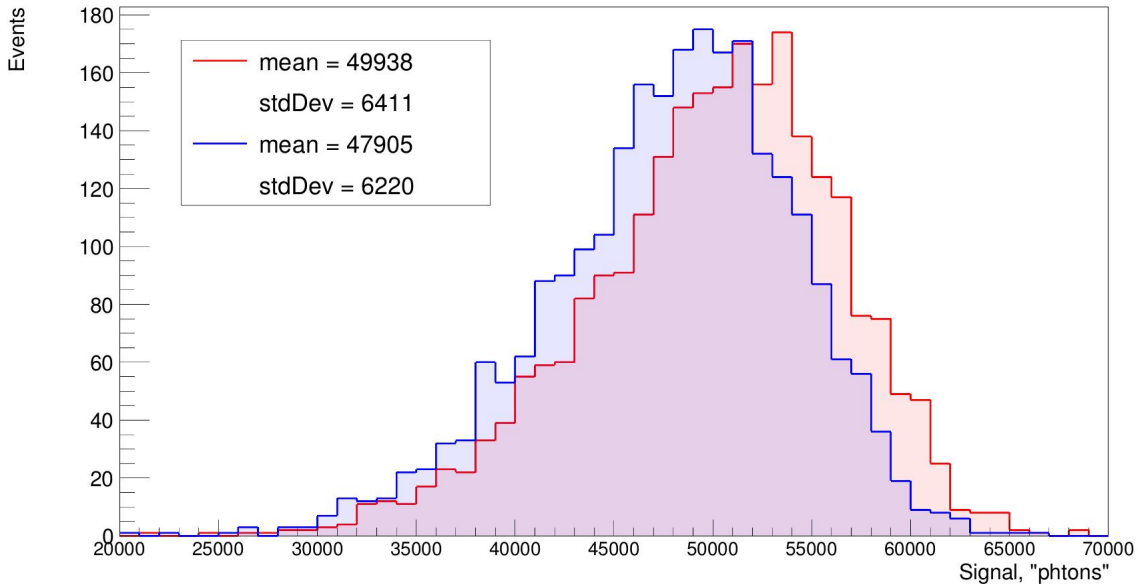




Delayed signal by the WLS fiber light guide with the mirror with scintillation

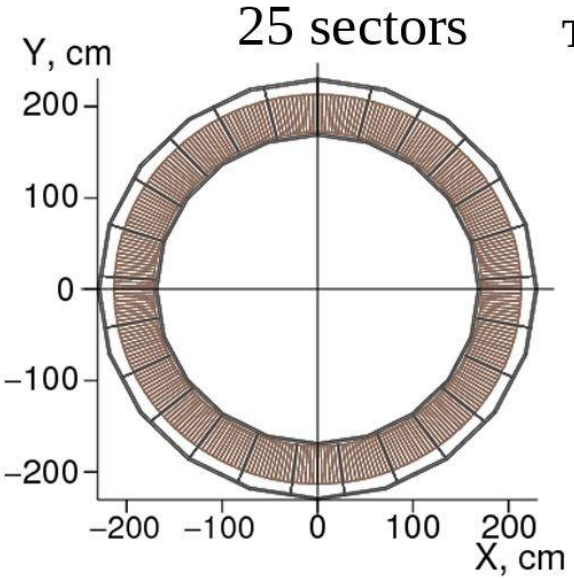


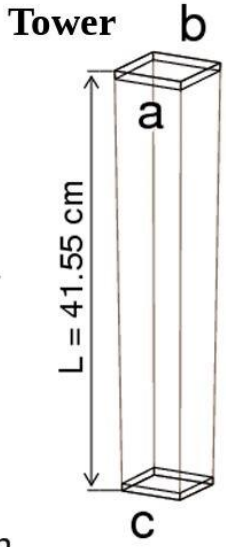
SiPM efficiencies

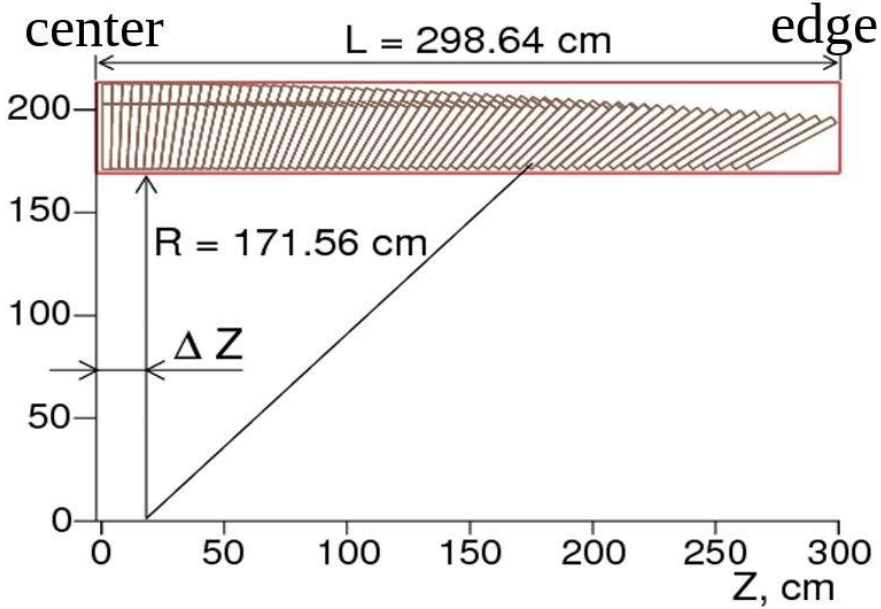


Photon distribution from all 16 channels for the cases where the beam enters the “blue cross” and the “red cross,” respectively.

Further plans







Viacheslav Kulikov on behalf of the **MPD**/ECAL group, CALIBRATION OF THE ECAL, XII MPD Collaboration Meeting, 2-6 October 2023, Serbia

Thank you for your attention!

