GaAs MC SIMULATION WITH THE CORRECTED DATA

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No fluorescence merging, Sides only

*Electrons 20 GeV, Mylar 30 foils*

Data + MC

Data + MC + Dummy

Data + MC + Air
**SIMULATION SETUP**

- New data files with the energy corrections of multi-pixel clusters produced by Yury have been used:
  
  `~ysmirnov/public/GaAsTimePix2018DataTTreesAnalysis/energyScaleShift_12Feb2020/afterAnalysis/*`

- The simulations were done for both Side/Side+corner matching and with/without 200 um FL cluster merging.

- The following configurations were considered:
  
  - 20 GeV Electrons, Mylar, 3mm, 50 um, 90 foils + Dummy radiator (run 39)
  - 20 GeV Electrons, Mylar, 3mm, 50 um, 90 foils + Air radiator (run 38)
  - 290 GeV Muons, Mylar, 3mm, 50 um, 30 foils + Dummy radiator (run 58)
  - 290 GeV Muons, Mylar, 3mm, 50 um, 90 foils + Dummy radiator (run 58)
  - 290 GeV Muons, Mylar, 3mm, 50 um, 90 foils

- All the simulation parameters, like diffusion coefficient, chip thickness, electronic noises and so on, were chosen based on the experiment.
Electrons 20 GeV

90 Mylar foils

Air

Dummy
Electrons 20 GeV

90 Mylar foils

Dummy
CONCLUSION

- For the Mylar radiator and 20 GeV electrons the low-energy part is almost always have the excess for some reason.

- For the 290 GeV muons the situation is better, but low energy peak is still higher in the MC.

- The FL merging for MC works in a bit different way than for Data. Any problems with the analysis code?

- Something wrong with the MC or with the Data?