

Old vs New camera

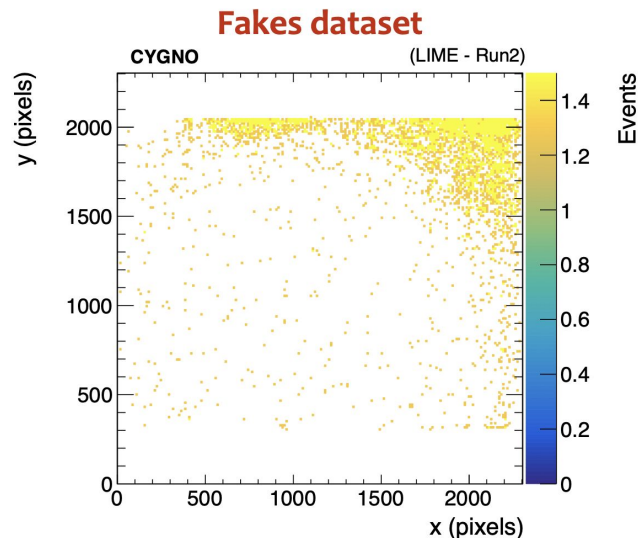
Stefano Piacentini

Reconstruction & Analysis Meeting

11/05/2023

Introduction

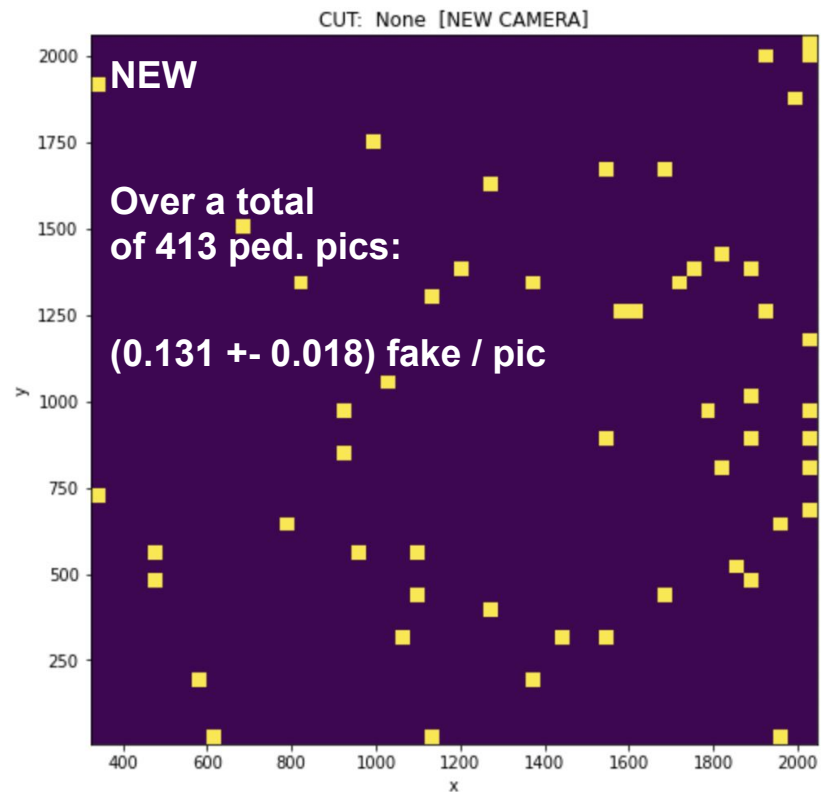
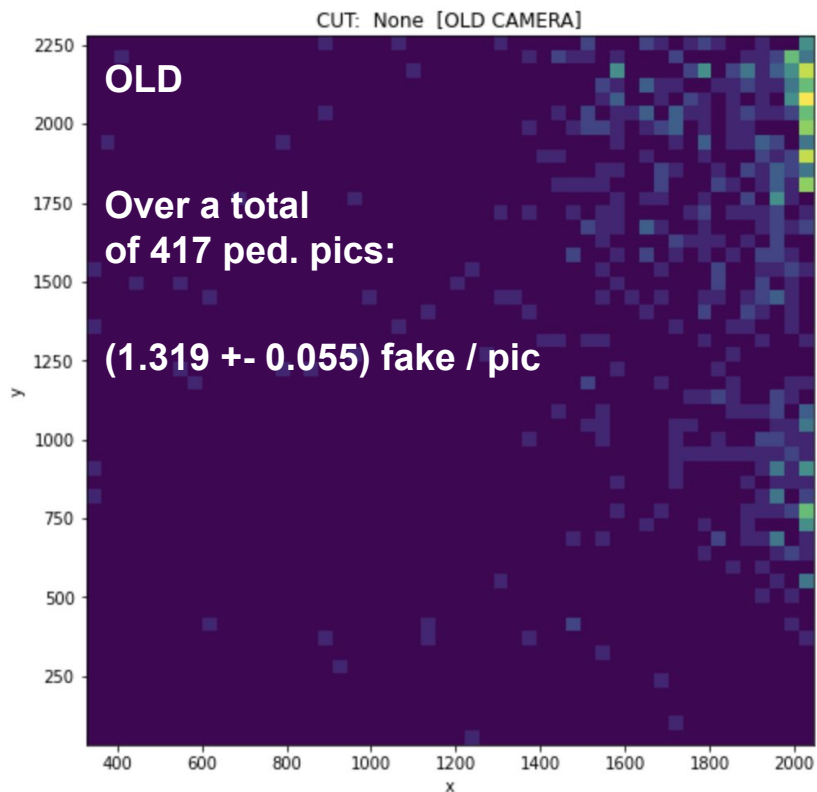
- Between RUN 2 and RUN 3 **we changed the camera** with the one we were using in Frascati (same model).
- **Reason:** the “old” showed some noisy regions were fake clusters are reconstructed by our code
- **Goal:** compare the fake cluster rate of “new” camera with respect to the “old” one



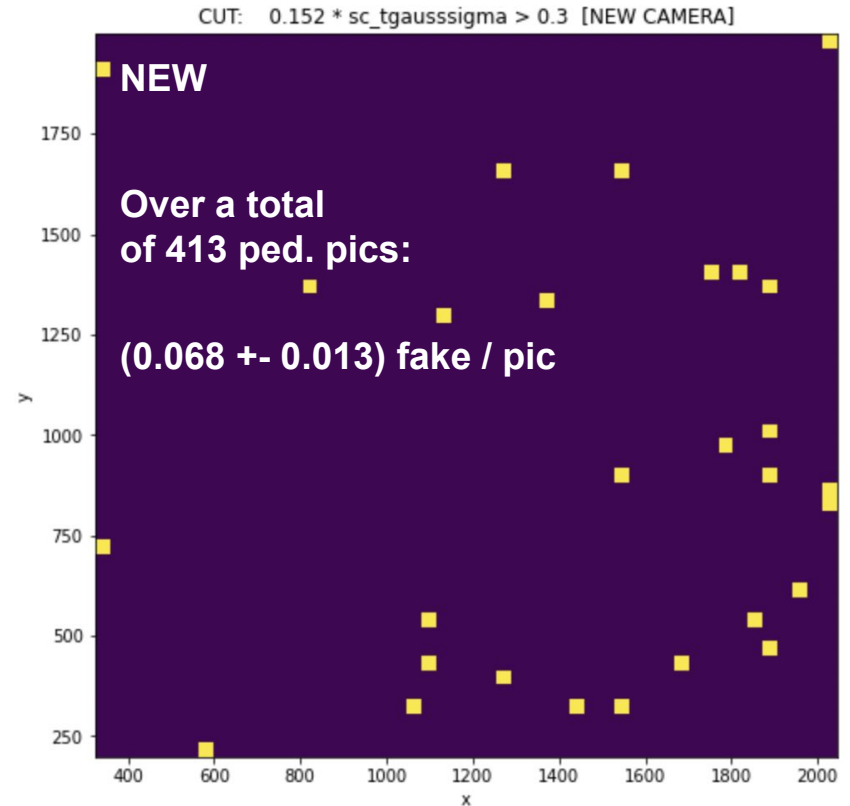
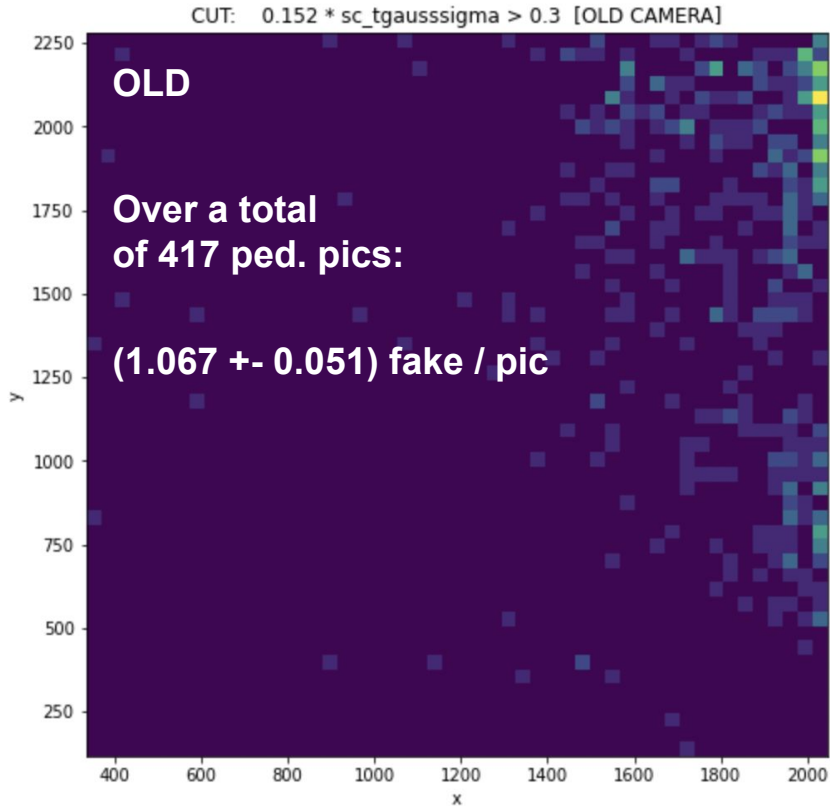
Dataset used for this study

- Use **pedestal runs** to look for fake clusters. Pedestal run reconstructed ntuples contain:
 - Events on the CMOS sensors [very thin and dense events]
 - Fake cluster
- **Reconstruction:**
 - Winter23 version of the code
 - Use the run themselves as pedestals (e.g. run 11260 is the pedestal run for the reconstruction of run 11260)
- **Old camera runs = [11260, 11265, 11270, 11275]**
- **New camera runs = [17800, 17805, 17810, 17815]**

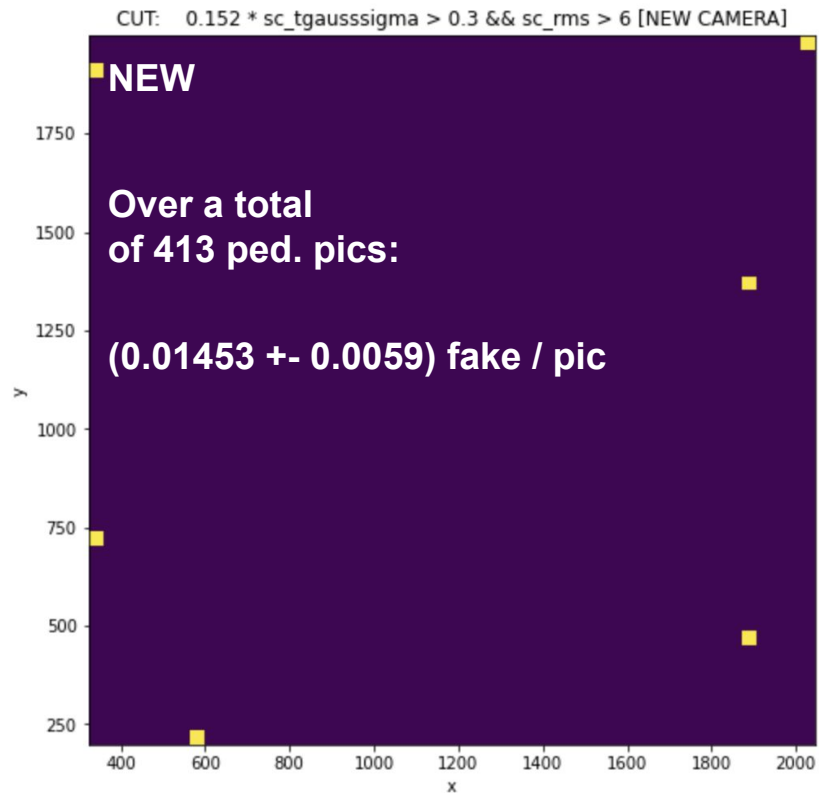
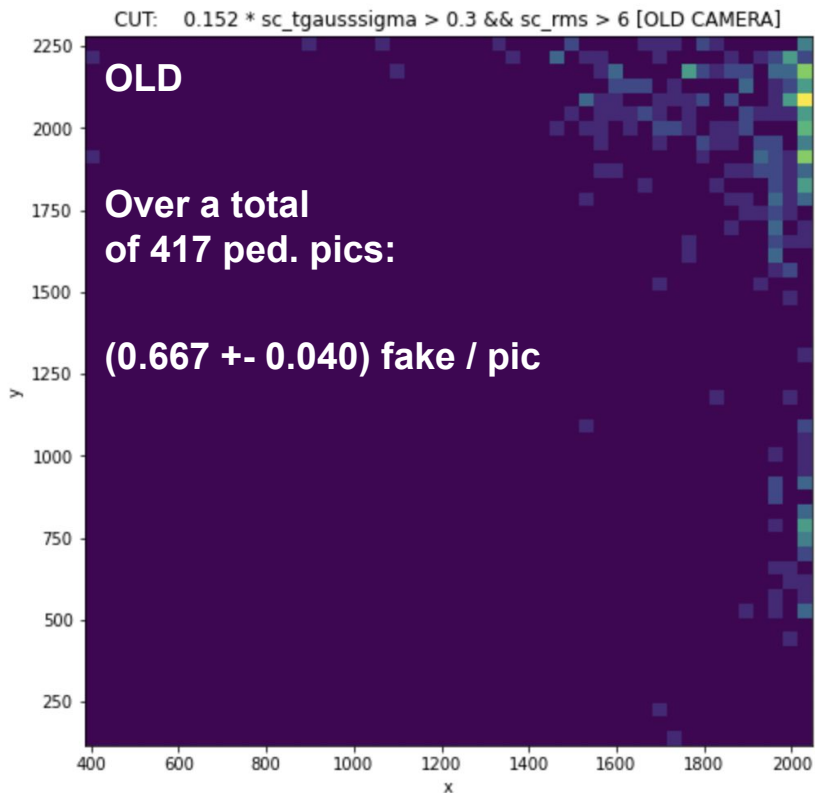
Results: no cuts



Results: cut on $sc_tgausssigma$ [No events on sensor]



Results: cut on $sc_tgausssigma$ + cut on sc_rms



Conclusions

- Between RUN 2 and RUN 3 **we changed the camera** with the one we were using in Frascati (same model).
- The **new** camera has **very good performance** in terms of noise
- **Much lower number of fake clusters** on the images!

- To do:
 - 2D map of the mean pedestal (old/new)
 - 2D map of the pedestal rms (old/new)
 - Other... ?