Università degli Studi dell'Insubria

INFN Sez. Milano

Test Beam 2018 - Analysis Summary

SiPM-based module

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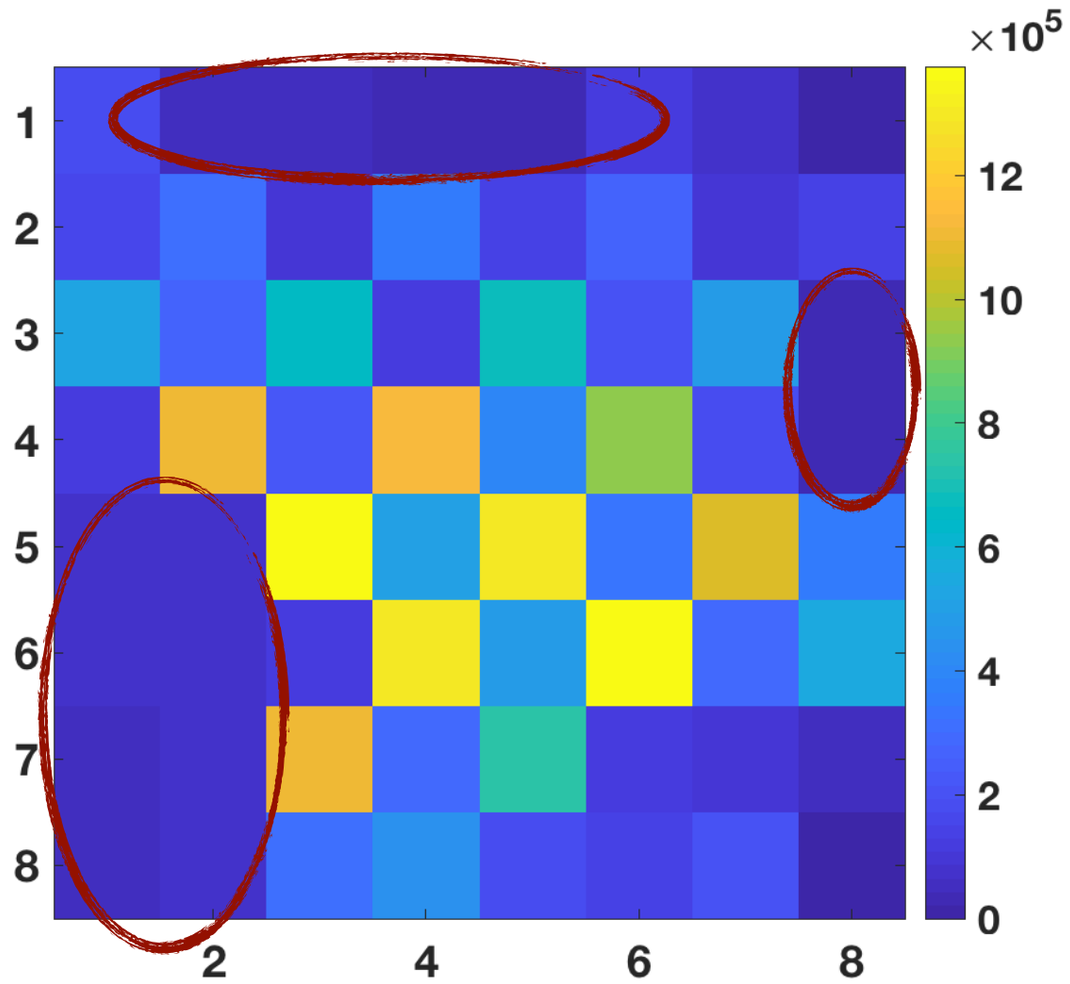
Outlines

- **Equalization of the module response**
- **First studies about e- selection**

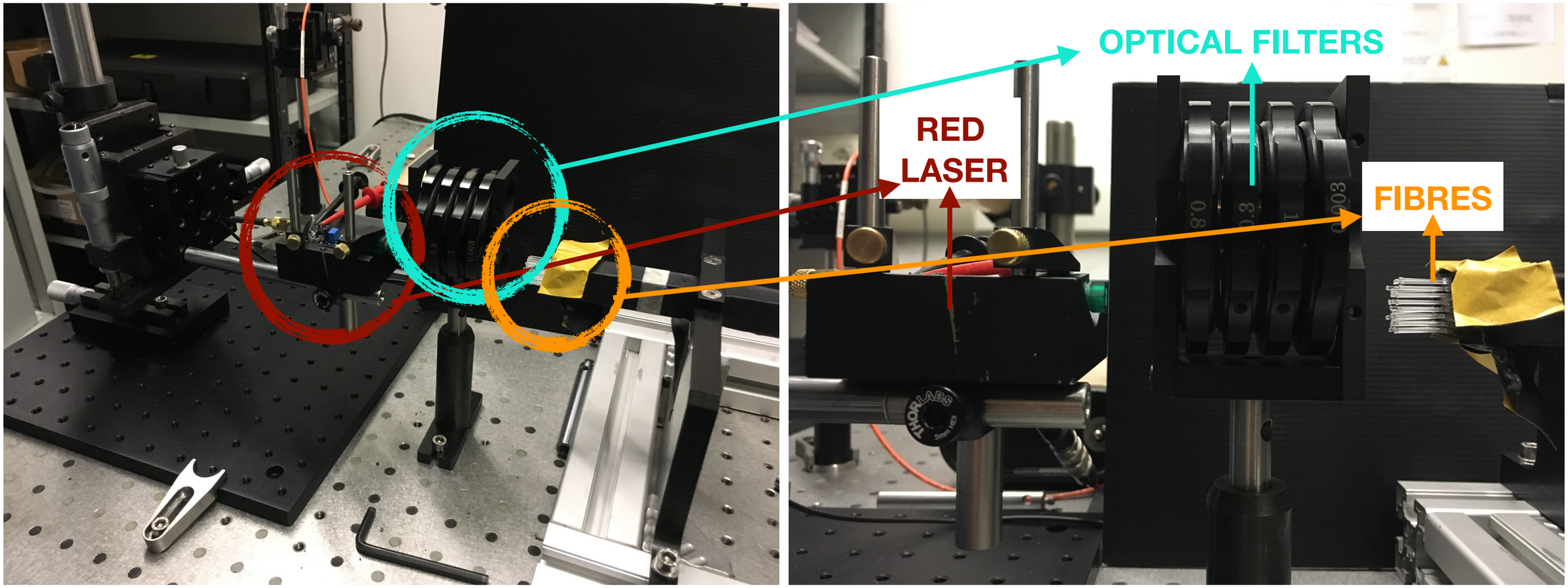
Equalization

- All the 64 SiPM are equalized
- A different response of the system (fibre + filter + SiPM) was found



Equalization

- All the 64 SiPM are equalized
- A different response of the system (fibre + filter + SiPM) was found
- Calibration sending the same laser pulse in all the 64 fibres

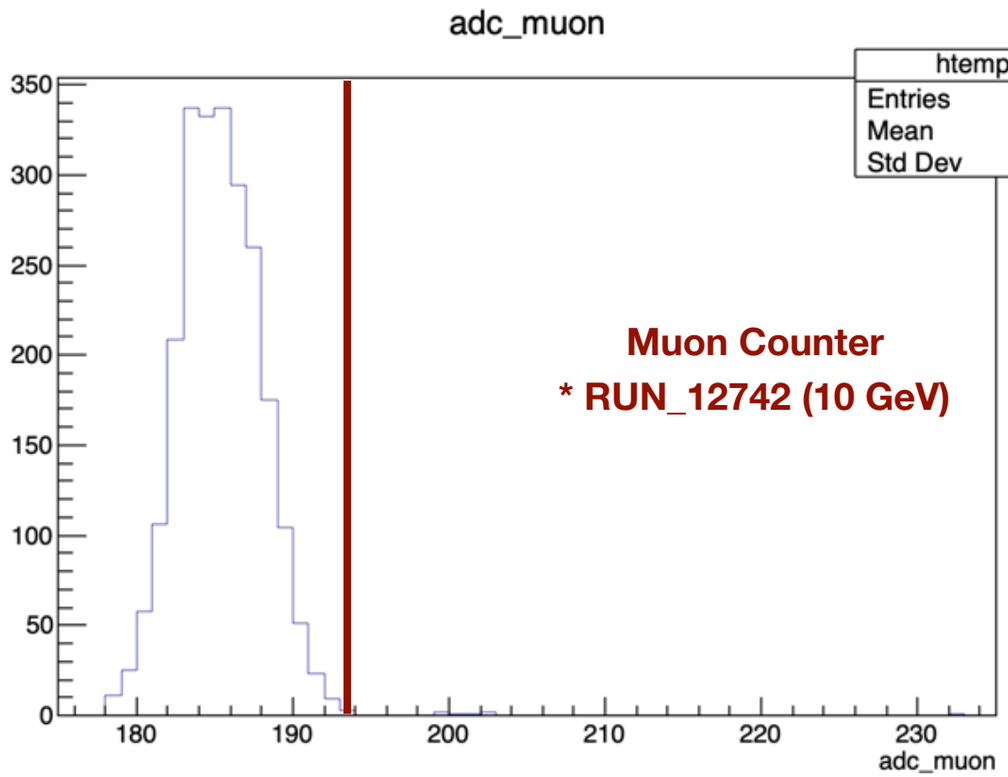


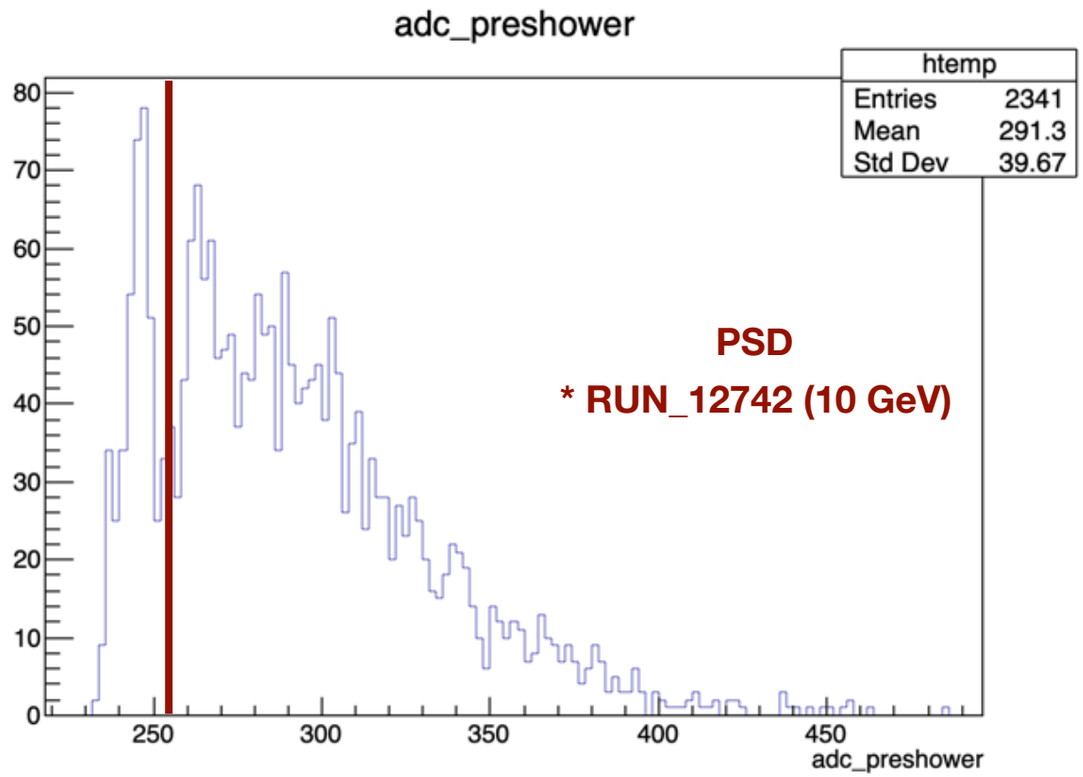
- Send the same amount of light in each fibre (RED laser = low attenuation by the yellow filter on S fibres)
- Measure the SiPM response -> Data already collected ✔

- NEXT STEP: Extract the “calibration matrix” (normalized to the max response) -> Start the analysis

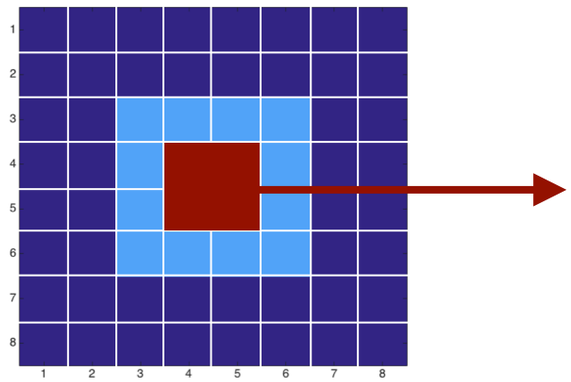
Cuts for e- selection

- **Noise cut:** events with the total number of fired cells (sum on all SiPM signals) greater than 20 p.e. ✔
- **Muons cut:** events with a signal in the muon counter below threshold ✔
- **PSD cut:** events with a signal in the PSD above threshold ✔





- **Geometrical cut:** events with the maximum signal in the central box **(4x4)** or **(2x2)** ✔

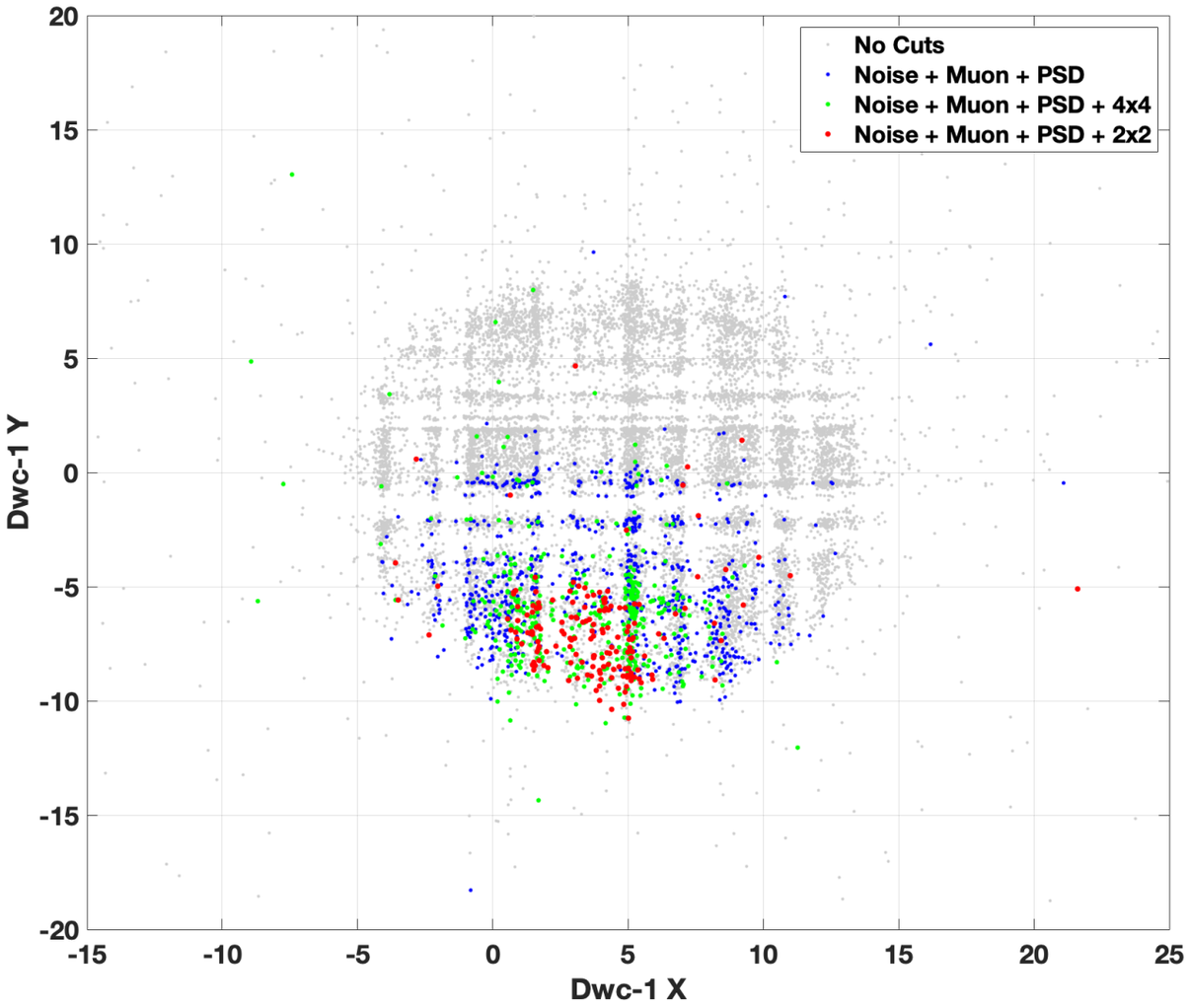


Central events = less lateral leakage

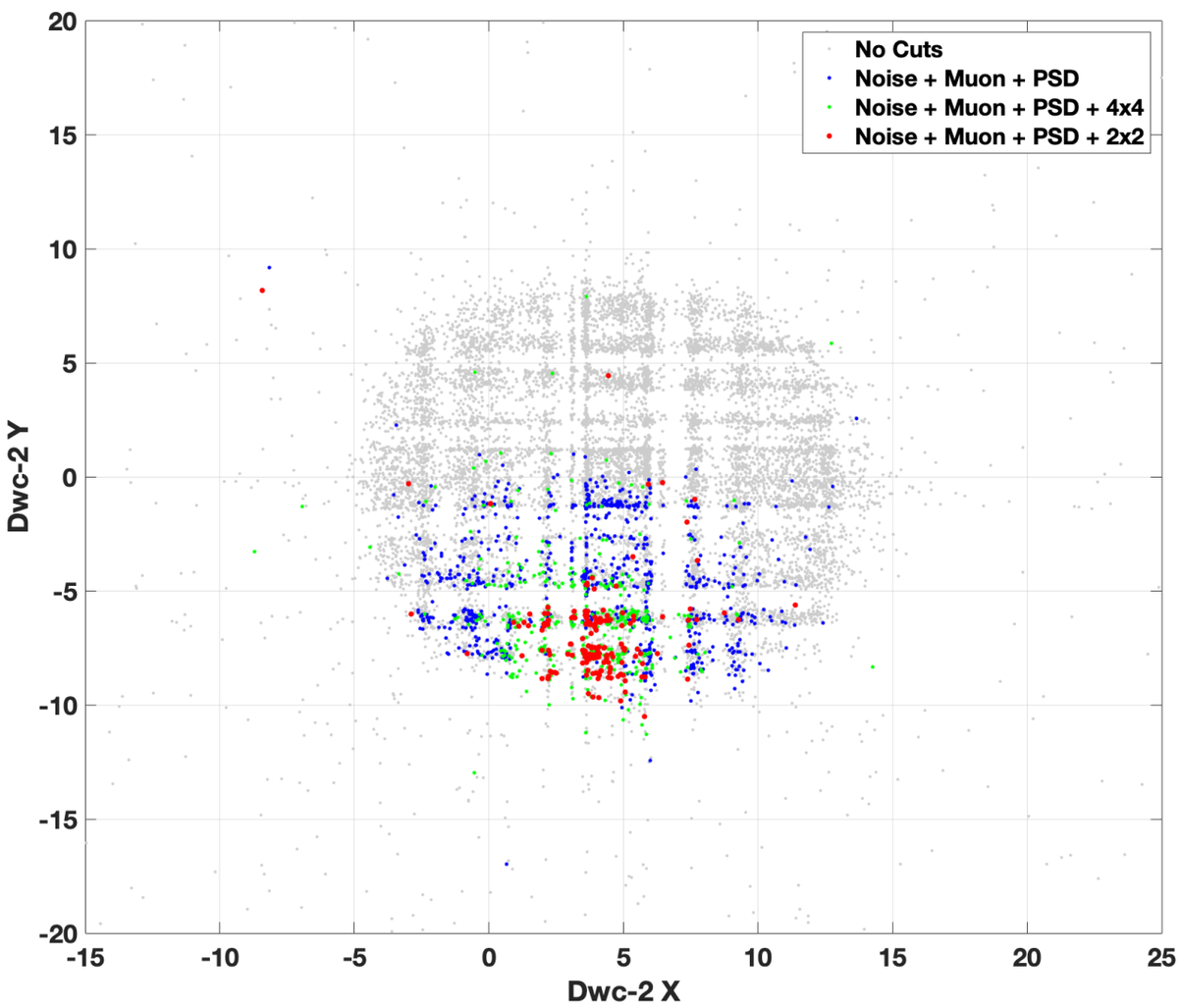
Cuts for e- selection

- **Noise cut:** events with the total number of fired cells (sum on all SiPM signals) greater than 20 p.e. ✔
- **Muons cut:** events with a signal in the muon counter below threshold ✔
- **PSD cut:** events with a signal in the PSD above threshold ✔
- **Geometrical cut: could be performed using the DWC informations!**

DWC 1



DWC 2



*** RUN_12767 (60 GeV) muons**