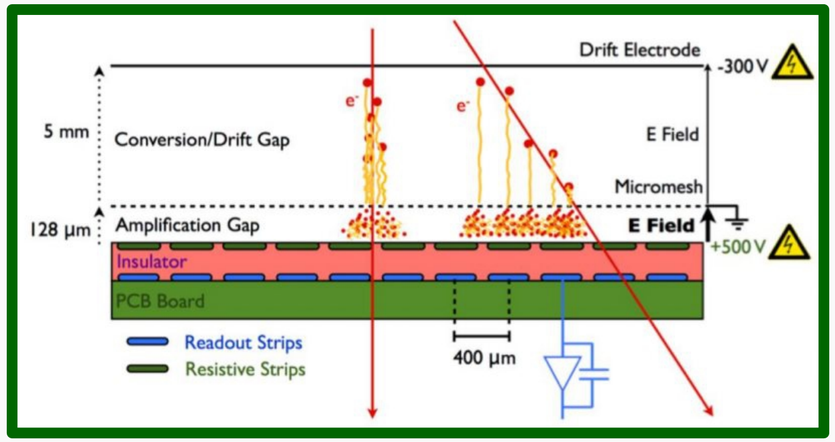
Particle Track Analysis using Neural Networks



Quick update : Results on dataset with gamma background

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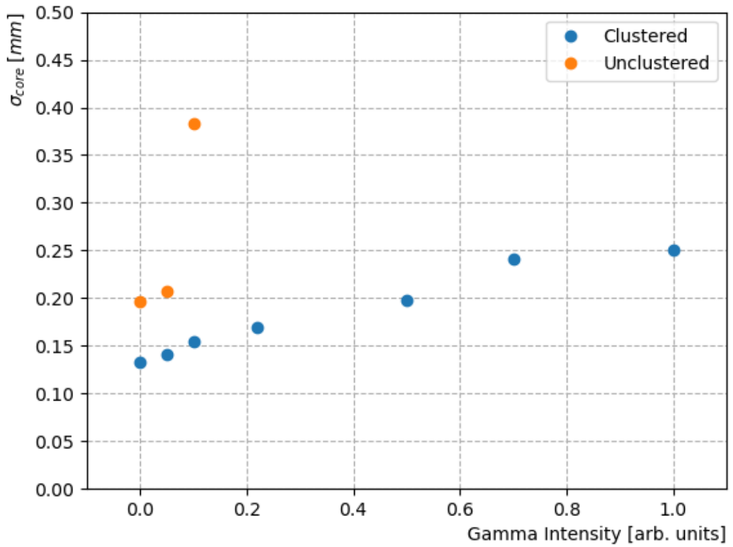
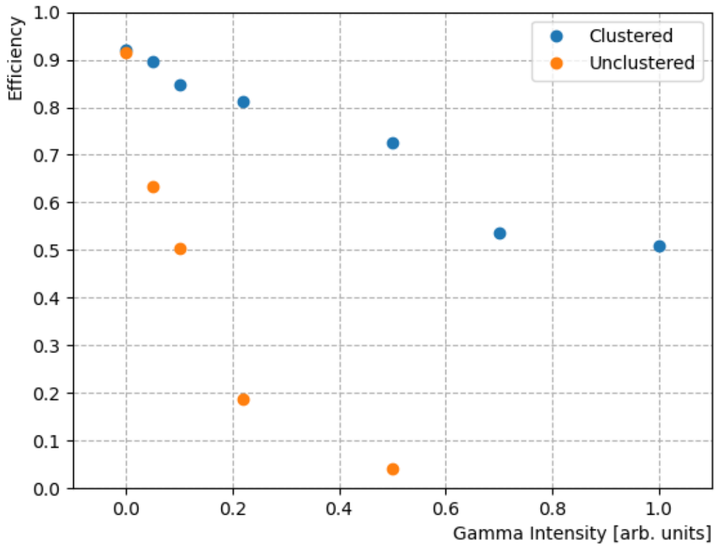
NN on events with gamma background

Testbeam dataset for inclined tracks (29°), 530V amplification Voltage, 100ns peaking time, with different intensity of gamma background.
Unclustered : Full data, no strip is discarded / Clustered : Only strips around +/- 3mm of hit position are kept



Core resolution for clustered/unclustered events



Efficiency (events reconstructed with +/- 2mm accuracy) for clustered/unclustered events

For lower gamma intensities, core resolutions are quasi-identical to previously achieved results in the group, no clear improvement.
For higher gamma intensities, core resolutions are worse than previously achieved results, one explanation may be that the datasets are too small for the NN to perform well (some have ~60 000 events).
The NN deals well with unclustered data at low background and manages to decide which strip to take in account but results get exponentially worse with higher background.