

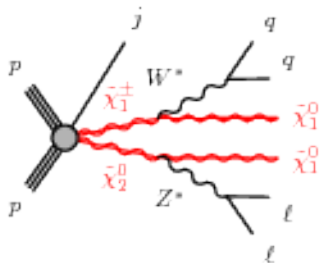
Working Progress

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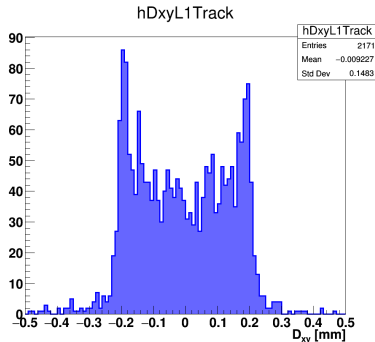
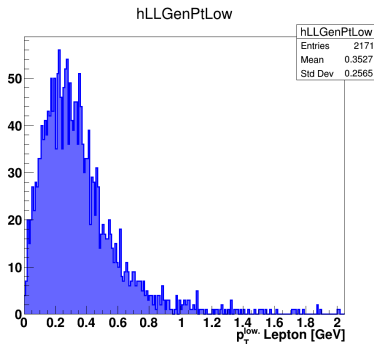
- Used PYTHIA 8 and FullSim
- SUSY: qqbar2chi+-chi0 (16 processes)
- SUSY: qqbar2chi0chi0 (10 processes)
- $\text{BR}(\chi_2^0 \rightarrow \gamma\gamma) = 22\%$
- $\text{BR}(\chi_2^0 \rightarrow ll) = 3.5\%$
- $M_1 = M_2 = 6.57 * 10^3 \text{ GeV}$
- $\mu = 100 \text{ GeV}$
- $m_\chi \sim 100 \text{ GeV}$
- $\Delta m(\chi_1^0, \chi_2^0) = 1.13 \text{ GeV}$
- $\Delta m(\chi_1^0, \chi_1^\pm) = 0.62 \text{ GeV}$
- 100 000 events

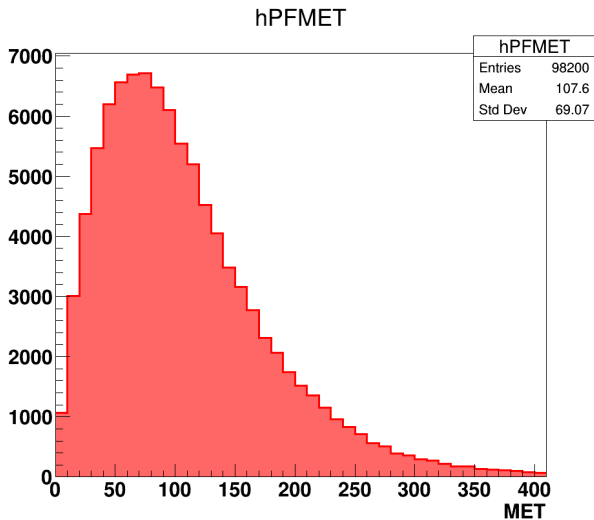


Observed in the samples:

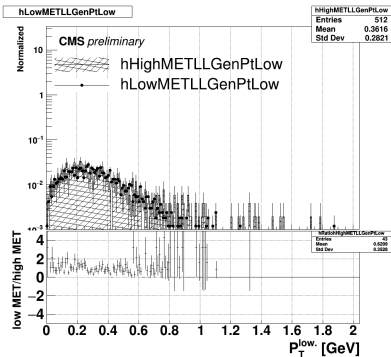
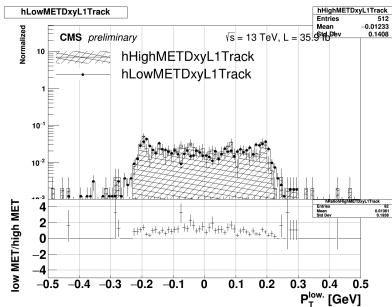
$\Delta m(\chi_2^0, \chi_1^0)$	$\chi_2^0 + \chi_1^0 + X$	$\chi_2^0 \rightarrow \chi_1^0 + ll$	$\chi_2^0 \rightarrow ee$	$\chi_2^0 \rightarrow \mu\mu$
1.13 GeV	60 %	2.2 %	1.1 %	1.1 %

- $\langle p_T(\chi_2^0) \rangle = 85.38$ GeV
- $\langle p_T(\chi_1^0) \rangle = 84.52$ GeV



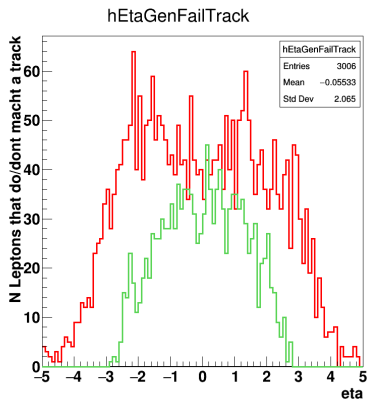
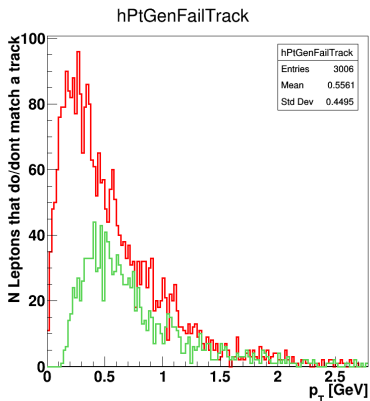


- if MET < 650 GeV: lowMET
- if MET > 650 GeV: highMET



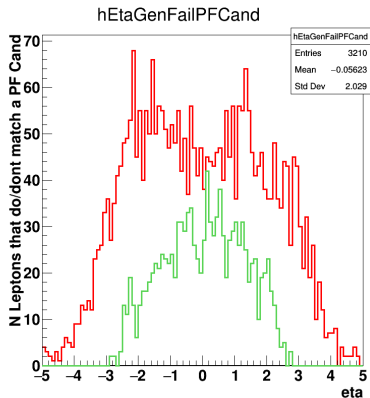
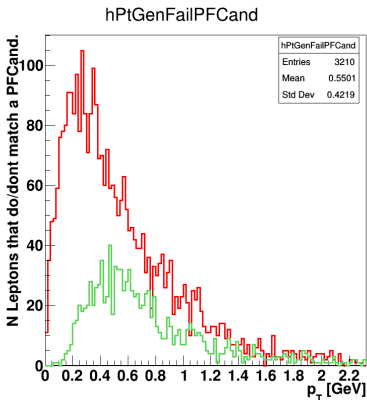
- matched if $\Delta R < 0.02$

Collection	Matched total	Matched ee	Matched $\mu\mu$
Tracks	31 %	21 %	40 %
PFCand	27 %	16 %	36 %

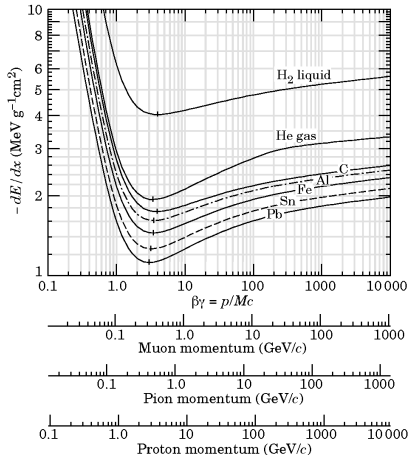
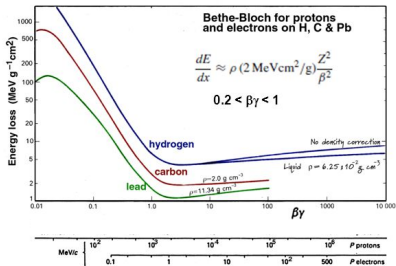


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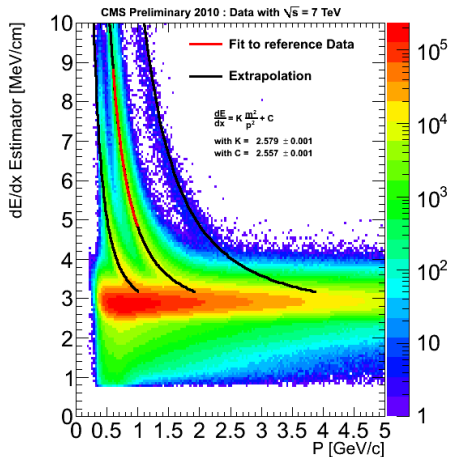
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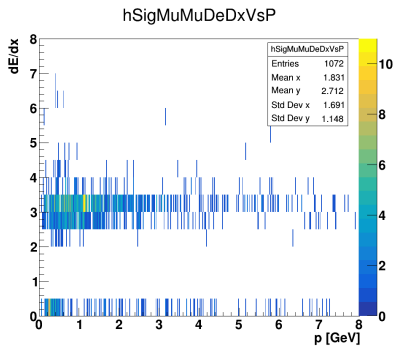
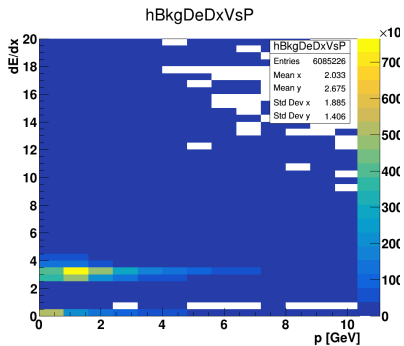
Can we use dE/dx ?

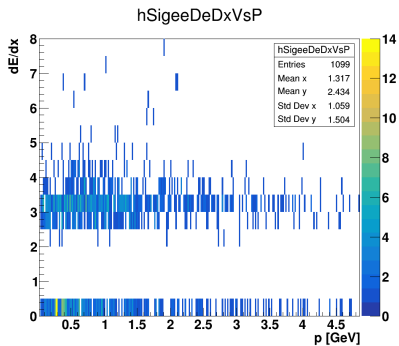
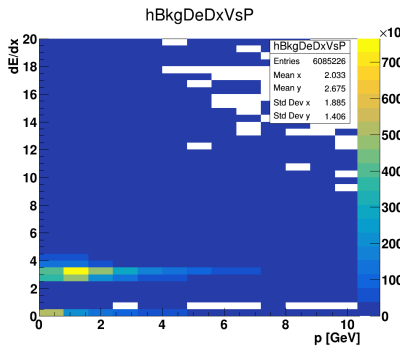


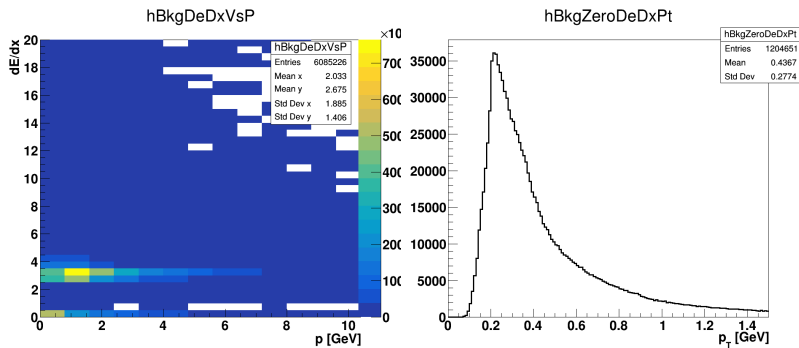
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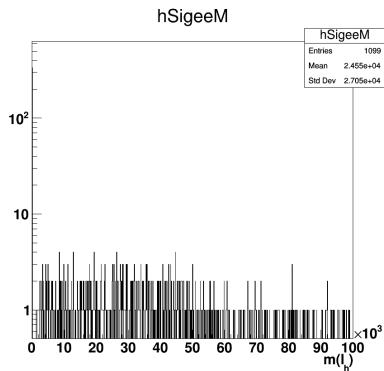
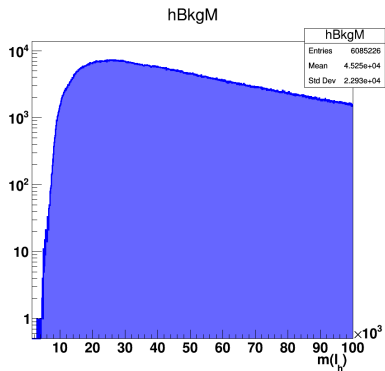


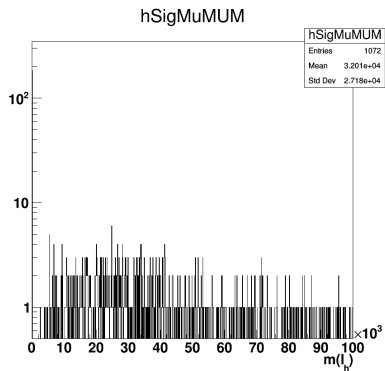
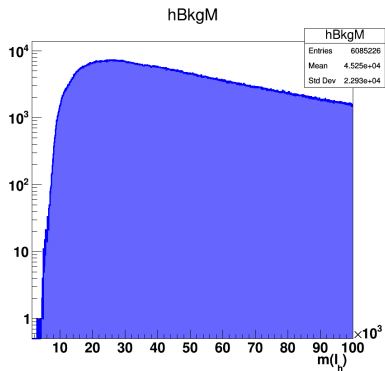
- dE/dx is calculated
 - a) from charge collected per hit (for pixel and strip hits)
 - b) with the harmonic-2 estimator on track level (using only strip cluster charge)
- $I_h = K \frac{m^2}{p^2} + C$ for $0.4 < \beta < 0.9$
- $K, C =$ constants
- left: dE/dx with harm.-2, kaon, proton, deuteron bands
- newly introduced CollectedClusterCharge cut in tracking (look up threshold)











- Reproduce Sample with $BR = 1$
- Structure/Form of D_{xy} ?