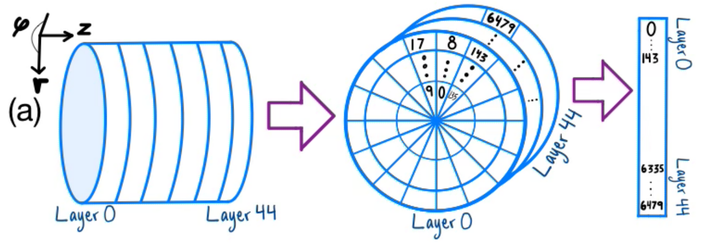
QVAE w/ Pegasus

Apr 8th

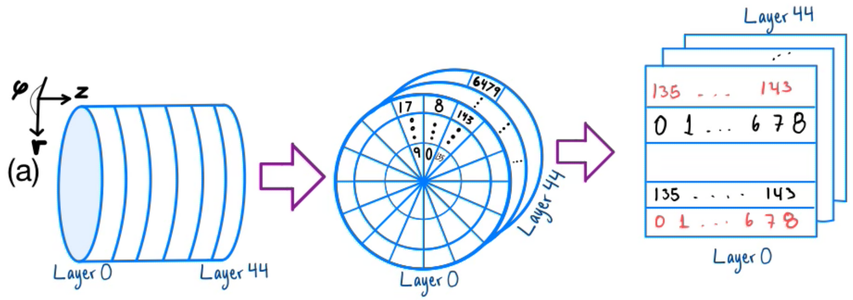
New CNN

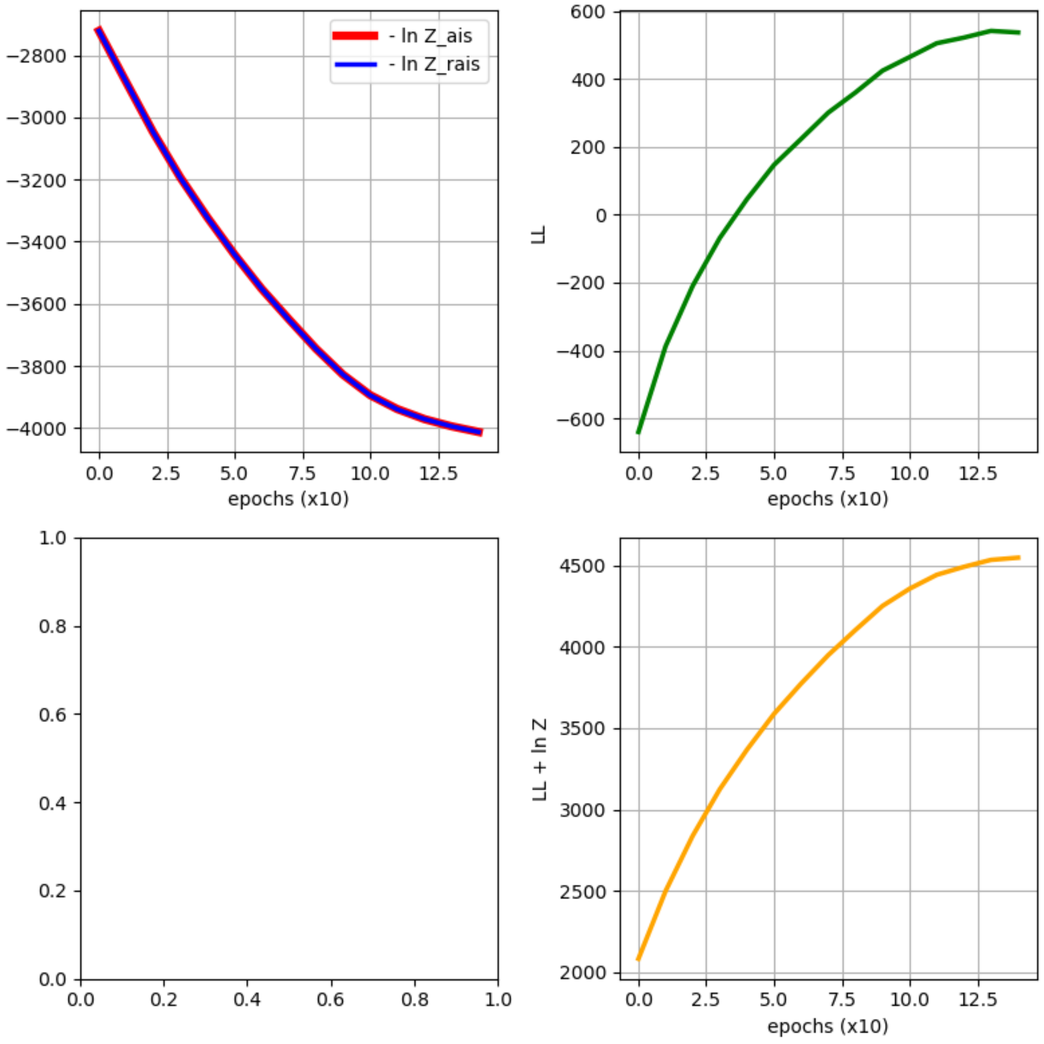
Robust Tree

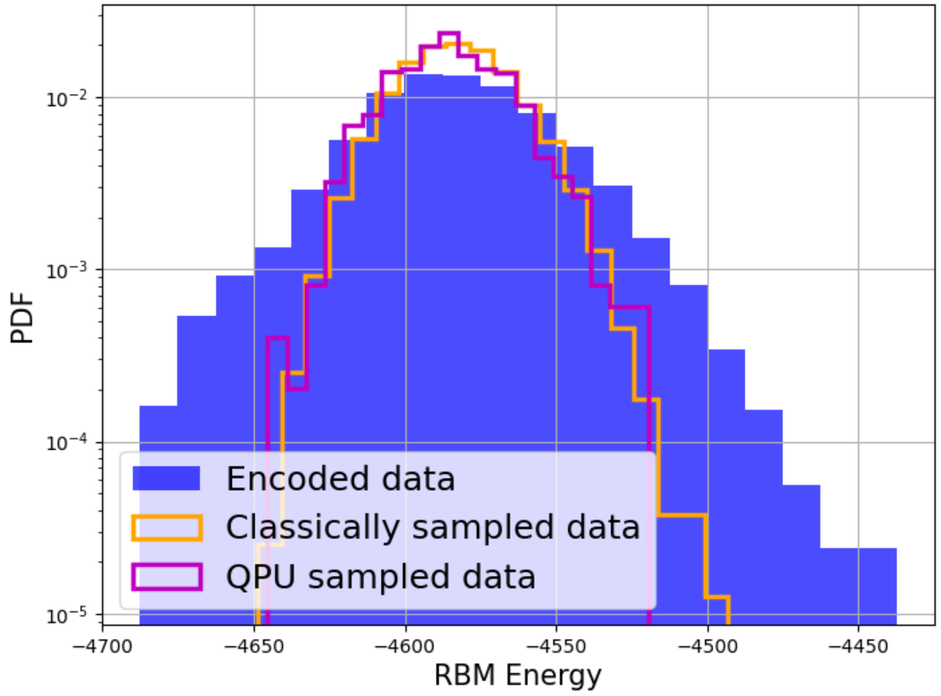


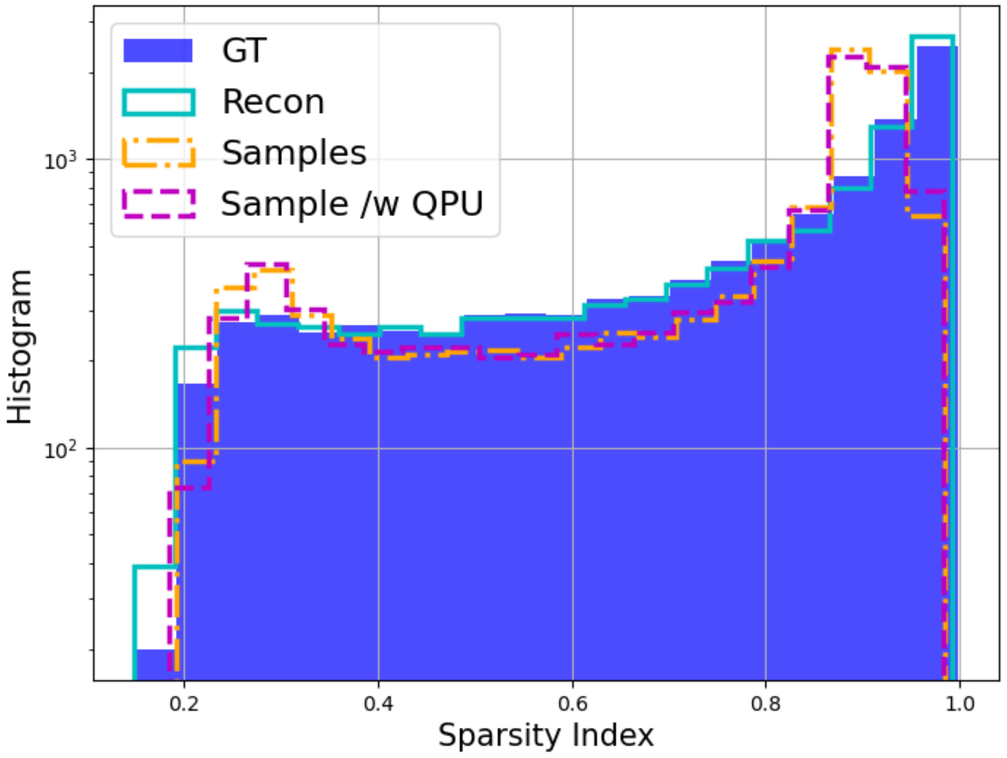
New Model

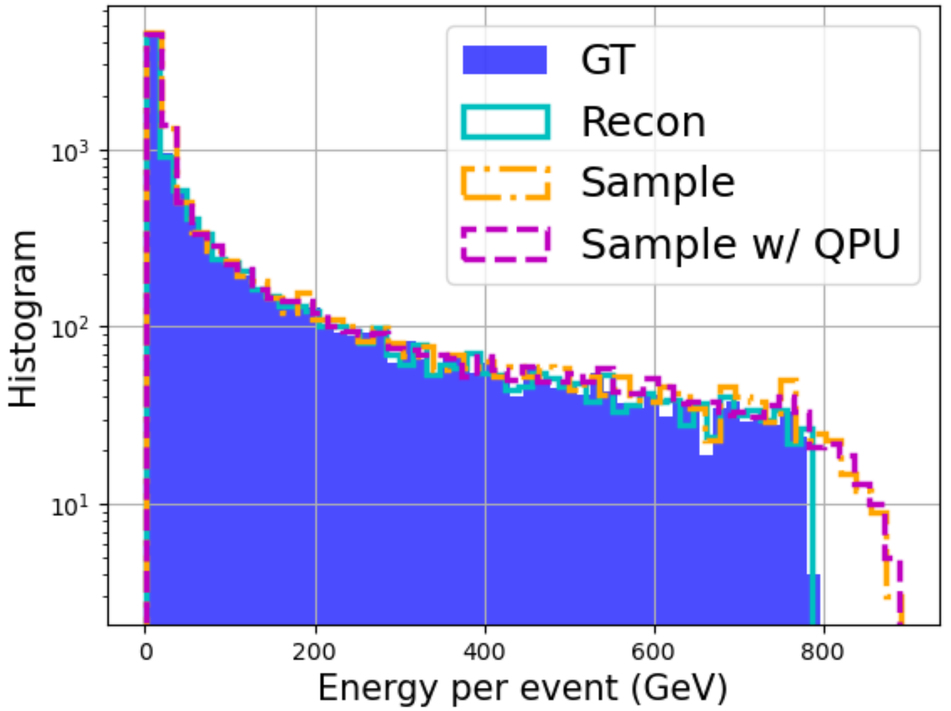
No hierarchies

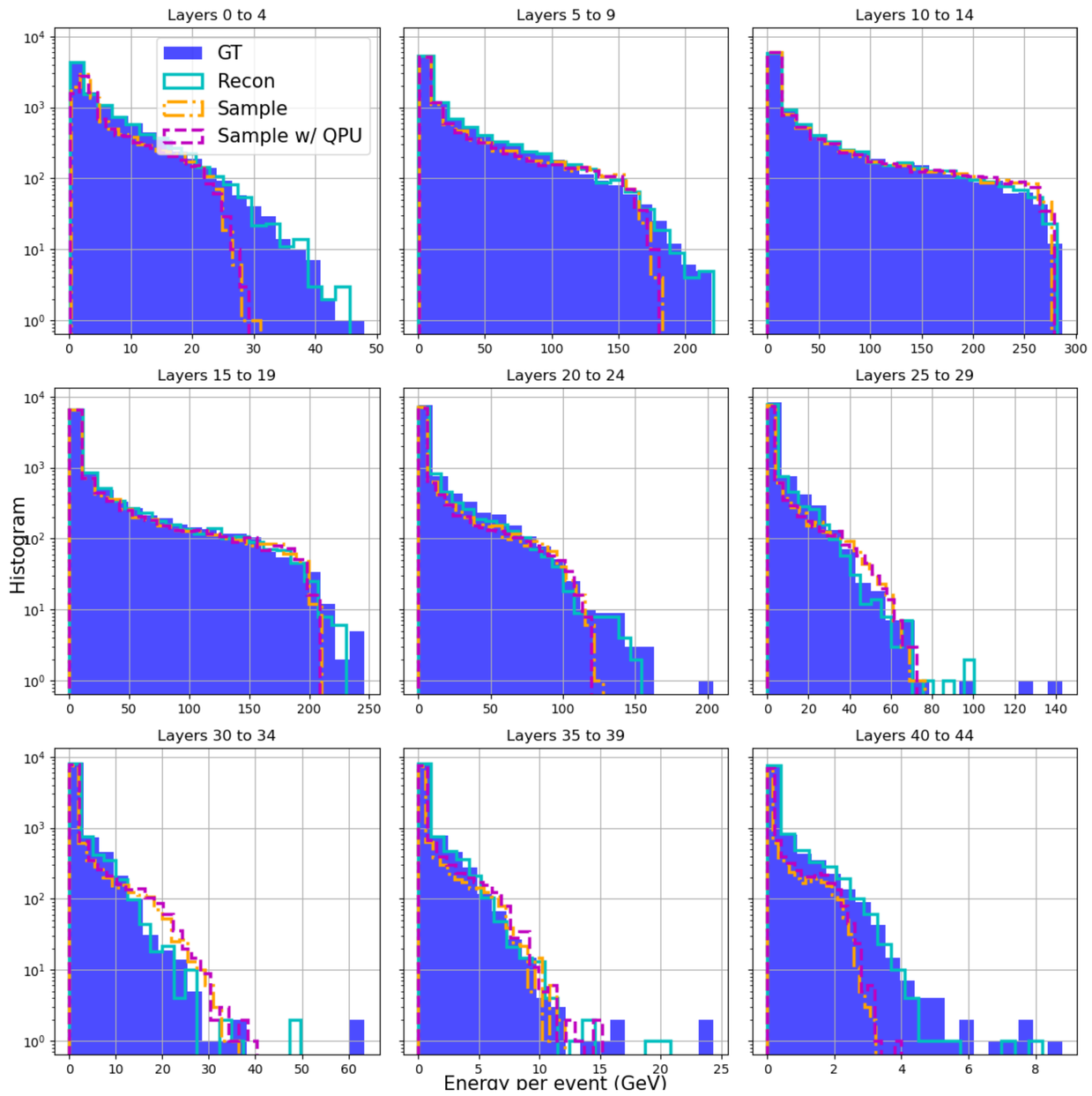



- ln Z_ais
- ln Z_rais
epochs (x10)
LL
epochs (x10)
LL + ln Z
epochs (x10)

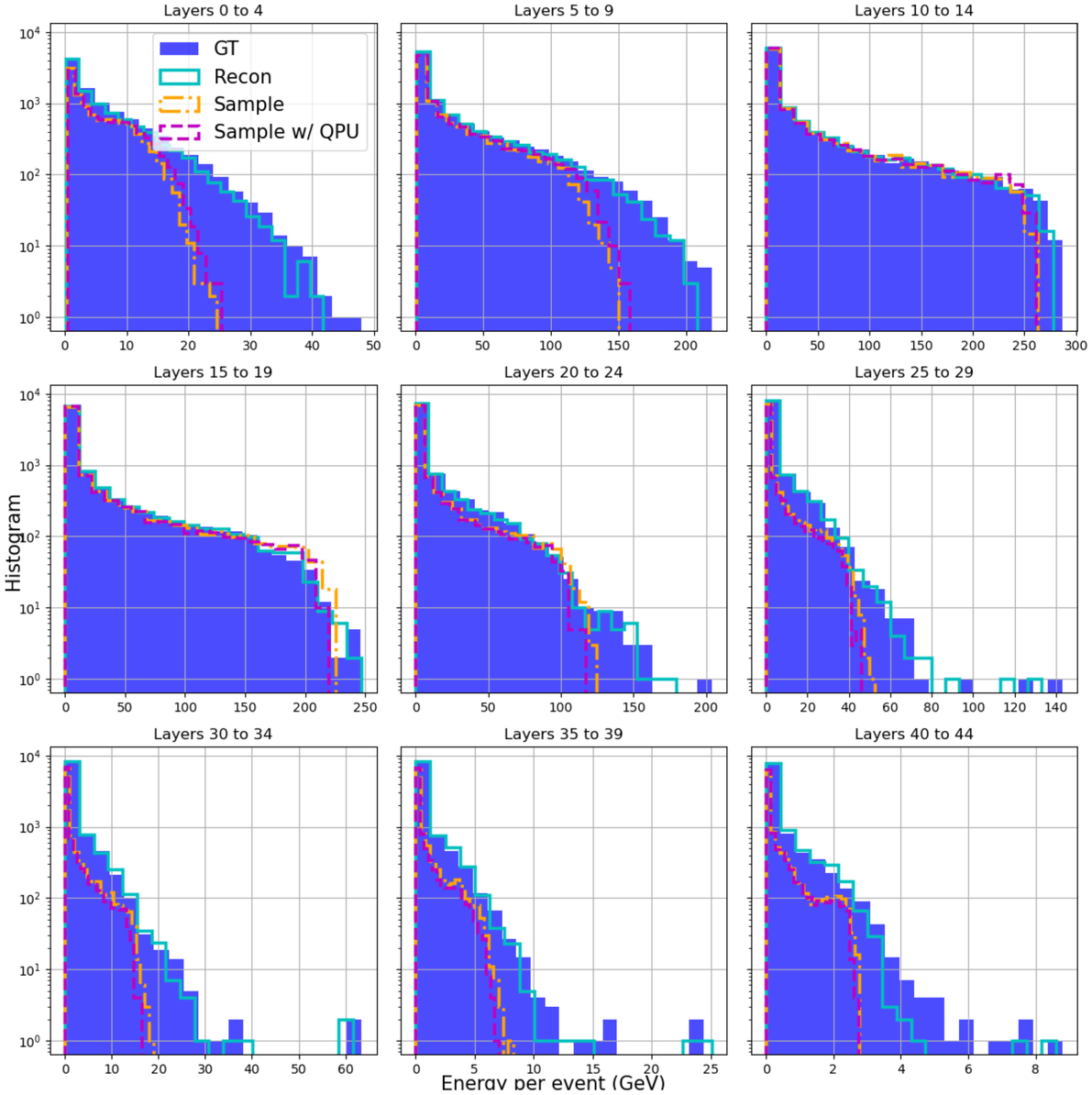

PDF
RBM Energy
Encoded data
Classically sampled data
QPU sampled data


GT
Recon
Samples
Sample /w QPU
Histogram
10^3
10^2
0.2
0.4
0.6
0.8
1.0
Sparsity Index

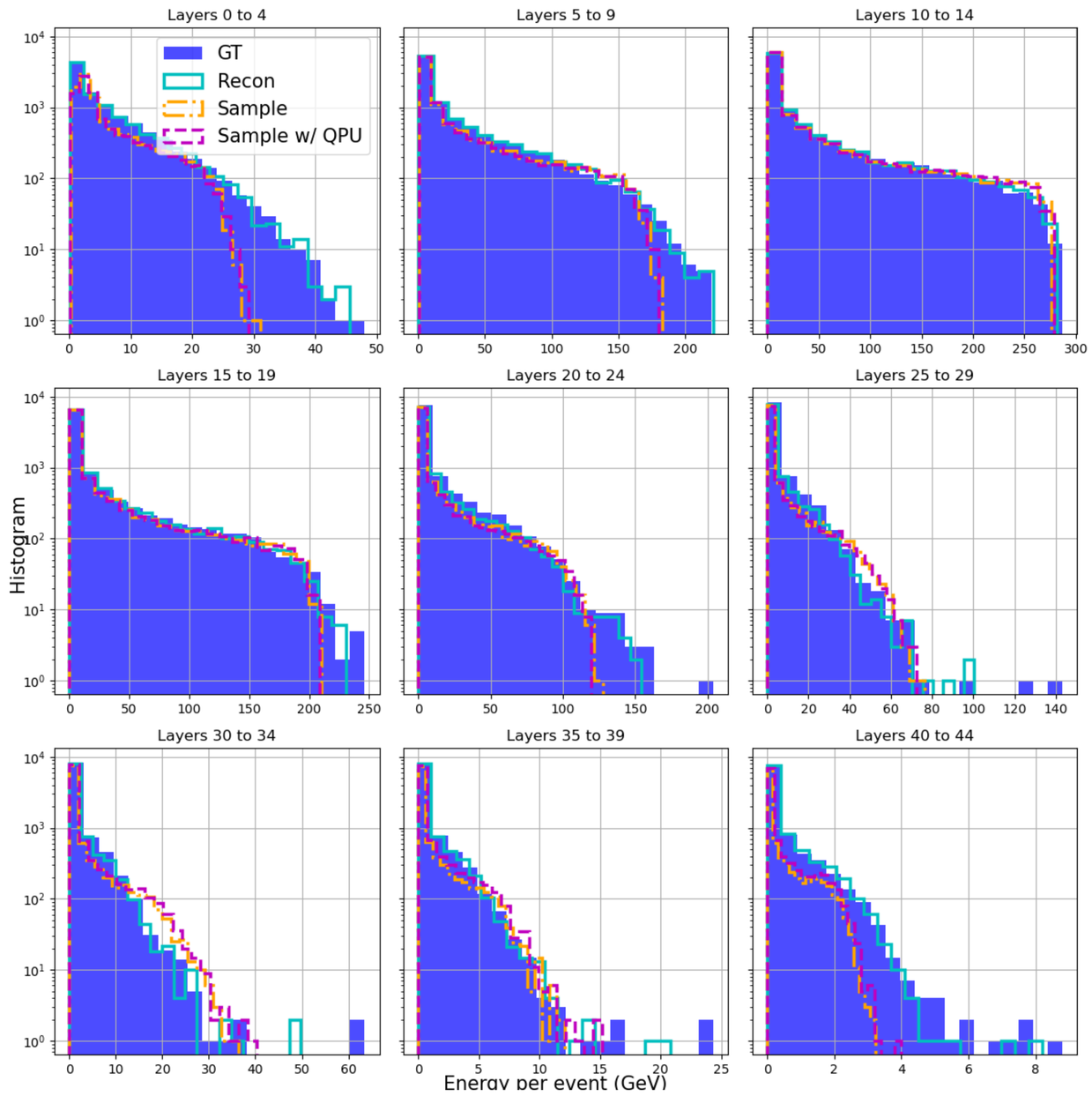

GT
Recon
Sample
Sample w/ QPU
Histogram
10^3
10^2
10^1
0
200
400
600
800
Energy per event (GeV)



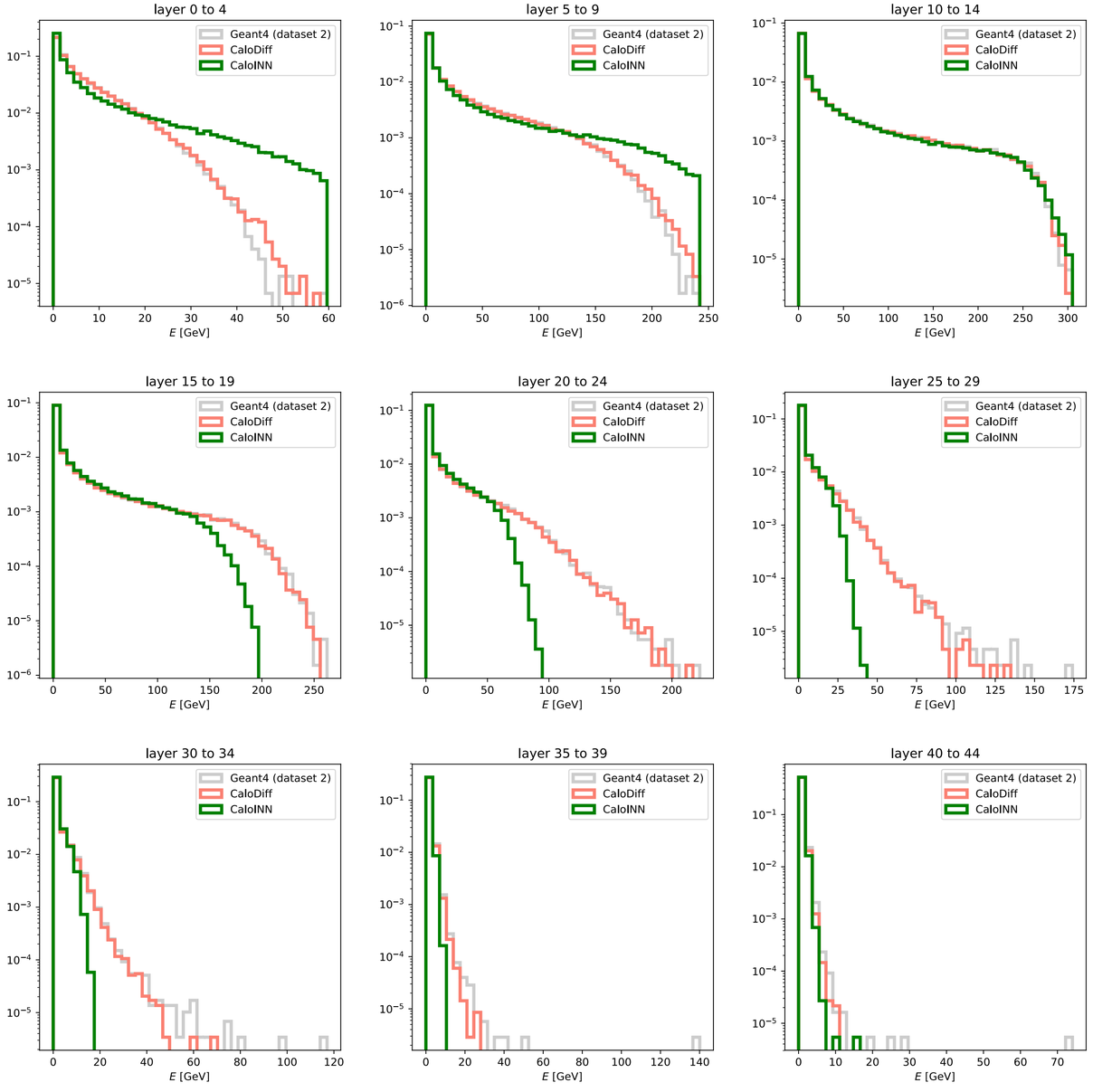
New model



Robust-tree model

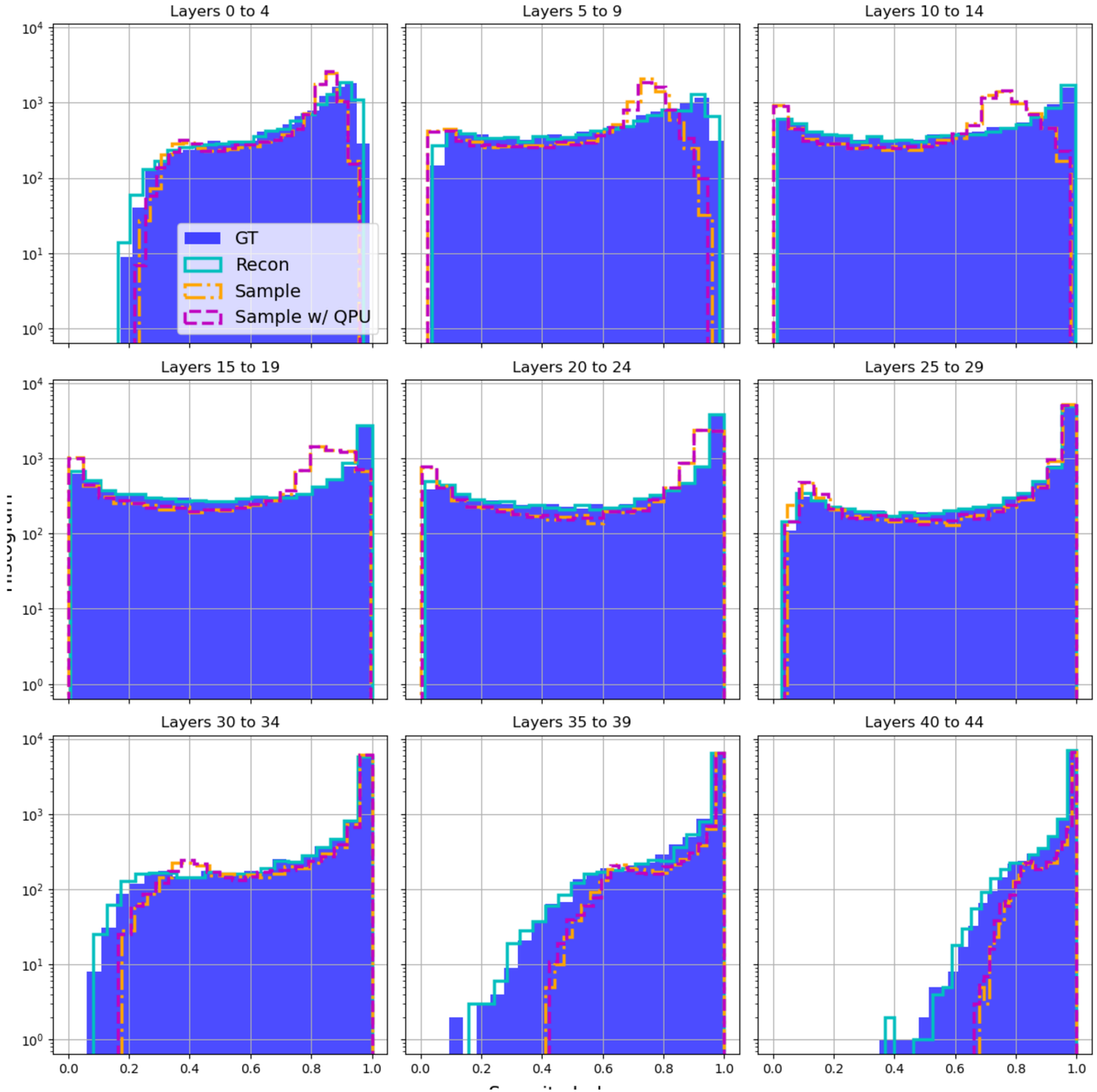


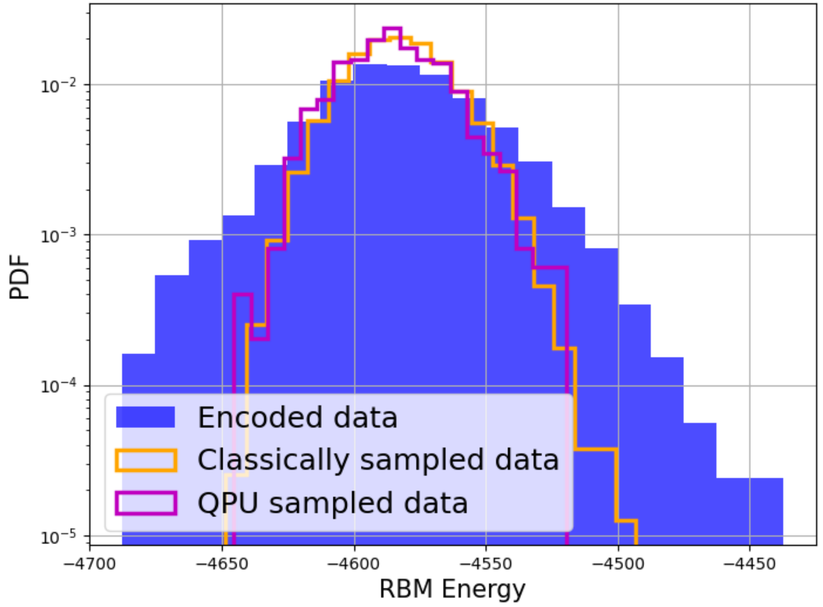
New model

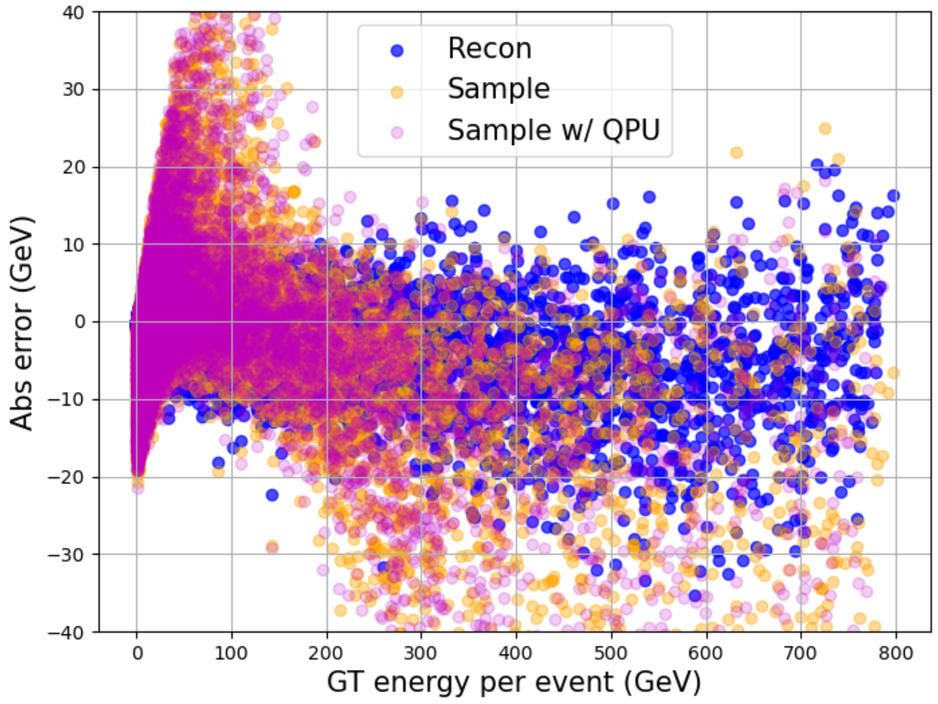


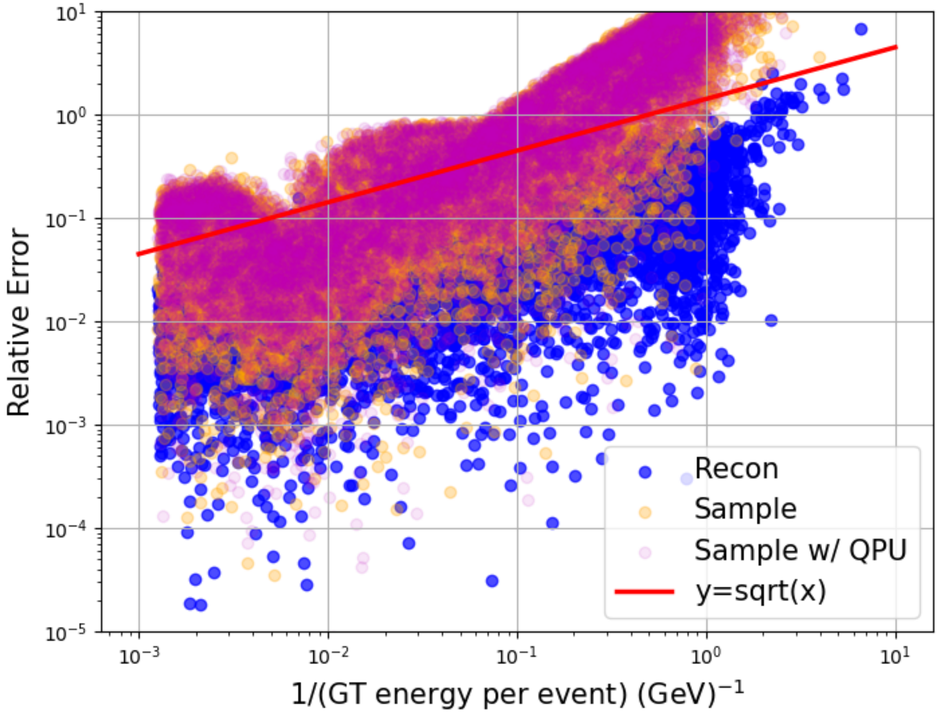
E inc of all 2

CaloDiff & CaloINN


Layers 0 to 4
Layers 5 to 9
Layers 10 to 14
Layers 15 to 19
Layers 20 to 24
Layers 25 to 29
Layers 30 to 34
Layers 35 to 39
Layers 40 to 44
GT
Recon
Sample
Sample w/ QPU


PDF
RBM Energy
Encoded data
Classically sampled data
QPU sampled data


Recon
Sample
Sample w/ QPU
Abs error (GeV)
GT energy per event (GeV)
40
30
20
10
0
−10
−20
−30
−40
0
100
200
300
400
500
600
700
800


Recon
Sample
Sample w/ QPU
y=sqrt(x)
Relative Error
1/(GT energy per event) (GeV)$^{-1}$
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-3}
10^{-2}
10^{-1}
10^{0}
10^{1}