GELATO Update 4/12/24

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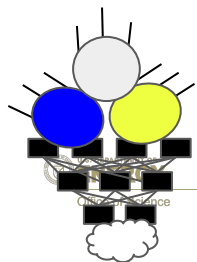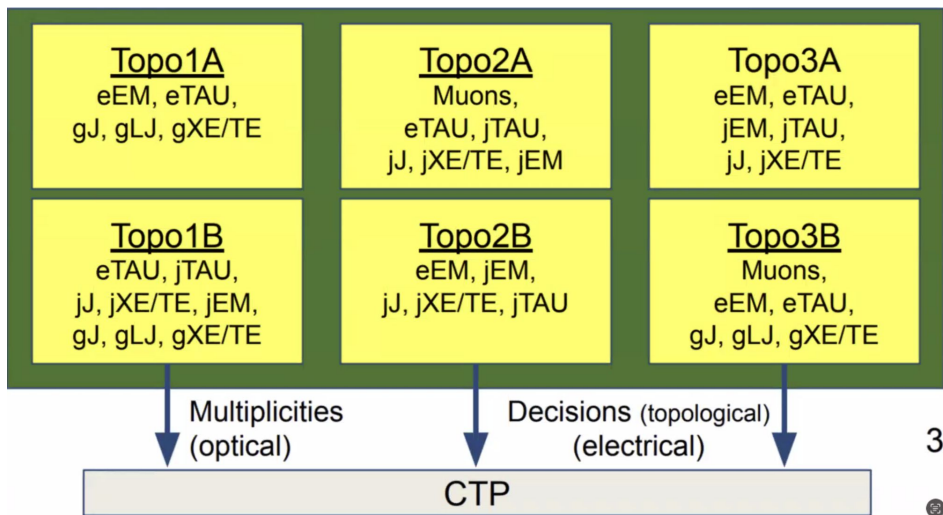
L1 Level Data

I want to make sure I'm
correctly matching collections


```python
# Read file
with h5py.File('../ntuples/AOD_EB_ntuples_04-04-2024.h5', 'r') as hf:
    HLT_jets = hf['HLT_jets'][:]
    L1_jFexSR_jets = hf['L1_jFexSR_jets'][:]
    L1_jFexLR_jets = hf['L1_jFexLR_jets'][:]
    HLT_electrons = hf['HLT_electrons'][:]
    LRT_electrons = hf['LRT_electrons'][:]
    L1_egammas = hf['L1_egammas'][:]
    HLT_muons = hf['HLT_muons'][:]
    LRT_muons = hf['LRT_muons'][:]
    L1_muons = hf['L1_muons'][:]
    L1_eFex_taus = hf['L1_eFex_taus'][:]
    L1_jFex_taus = hf['L1_jFex_taus'][:]
    HLT_photons = hf['HLT_photons'][:]
    HLT_MET = hf['HLT_MET'][:].reshape(-1, 1, 4)  # Broadcasting MET
    L1_MET = hf['L1_MET'][:].reshape(-1, 1, 4)
    pass_L1_unprescaled = hf["pass_L1_unprescaled"][:]
    pass_HLT_unprescaled = hf["pass_HLT_unprescaled"][:]
    EB_weights = hf["EB_weights"][:]# Read file
```
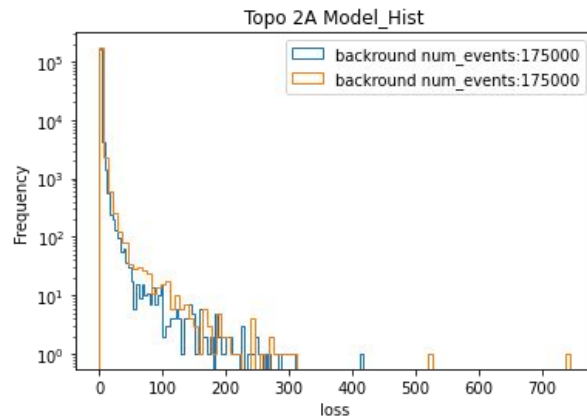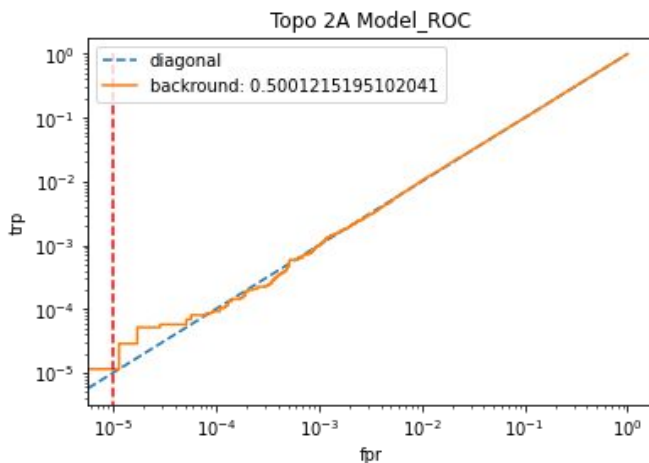
EB data

- How/when does Max use the weights?
- I want to make sure I use them consistently
- The following results make no use of the weights, I just wanted to make sure I could get a model to train on the data

Topo 2A (lemon)

Inputs:[L1_muons,L1_eFex_taus,L1_jFex_taus,L1_jFexLR_jets,L1_jFexSR_jets,L1_MET,L1_egammas]
Input size: 111
Model size: 111->32->16->3

Topo 2A Model_ROC
diagonal
backround: 0.5001215195102041

Topo 2A Model_Hist
backround num_events:175000
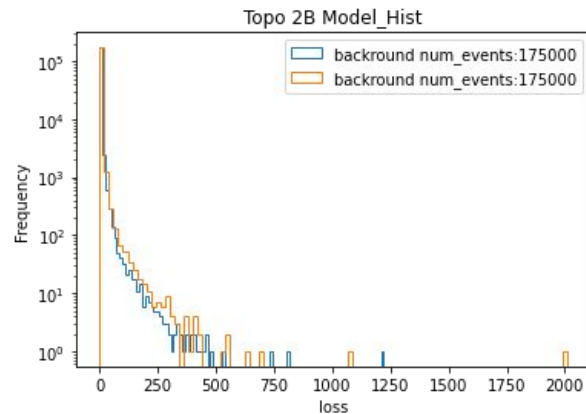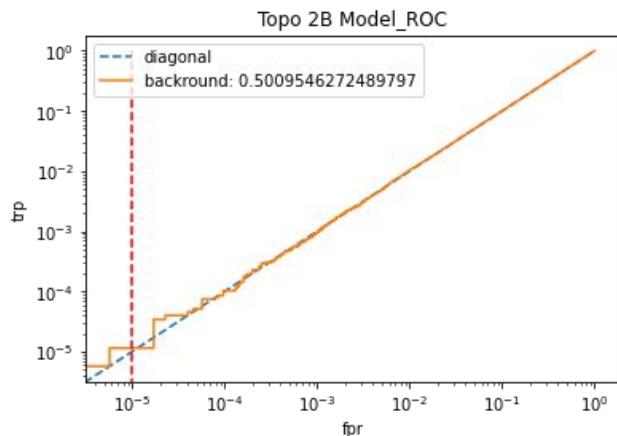backround num_events:175000

Topo 2B (chocolate)

Inputs:[L1_egammas,L1_jFexLR_jets,L1_jFexSR_jets,L1_MET,L1_jFex_taus]
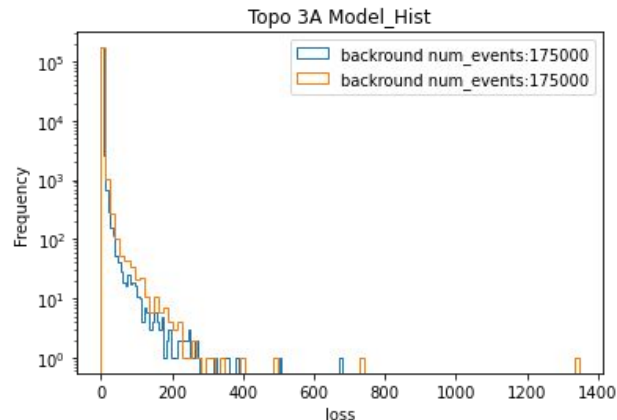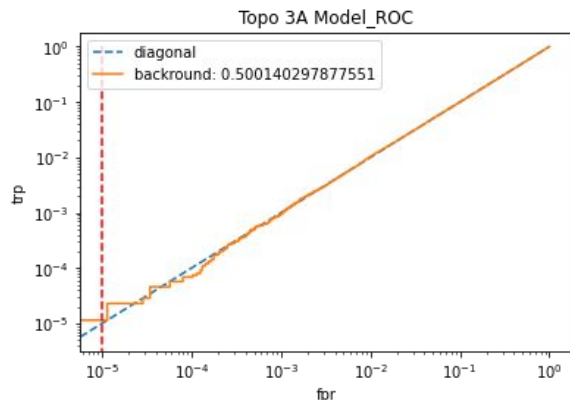Input size: 75
Model size: 75->32->16->3

Topo 3A (Strawberry)

Inputs:[L1_egammas,L1_eFex_taus,L1_jFex_taus,L1_jFexLR_jets,L1_jFexSR_jets,L1_MET]
Input size: 93
Model size: 93->32->16->3

Topo 3B (Pistachio)

To Do, I wasn't sure what gJ, gLJ, and JXE/TE referred to so I didn't train this model yet

Graphical Representation of Latent Space

- I tried to make a 3d plot, but especially for 40MHZ with several signals it was nearly impossible to read
- I decided projections onto the coordinate planes would be potentially a good approach