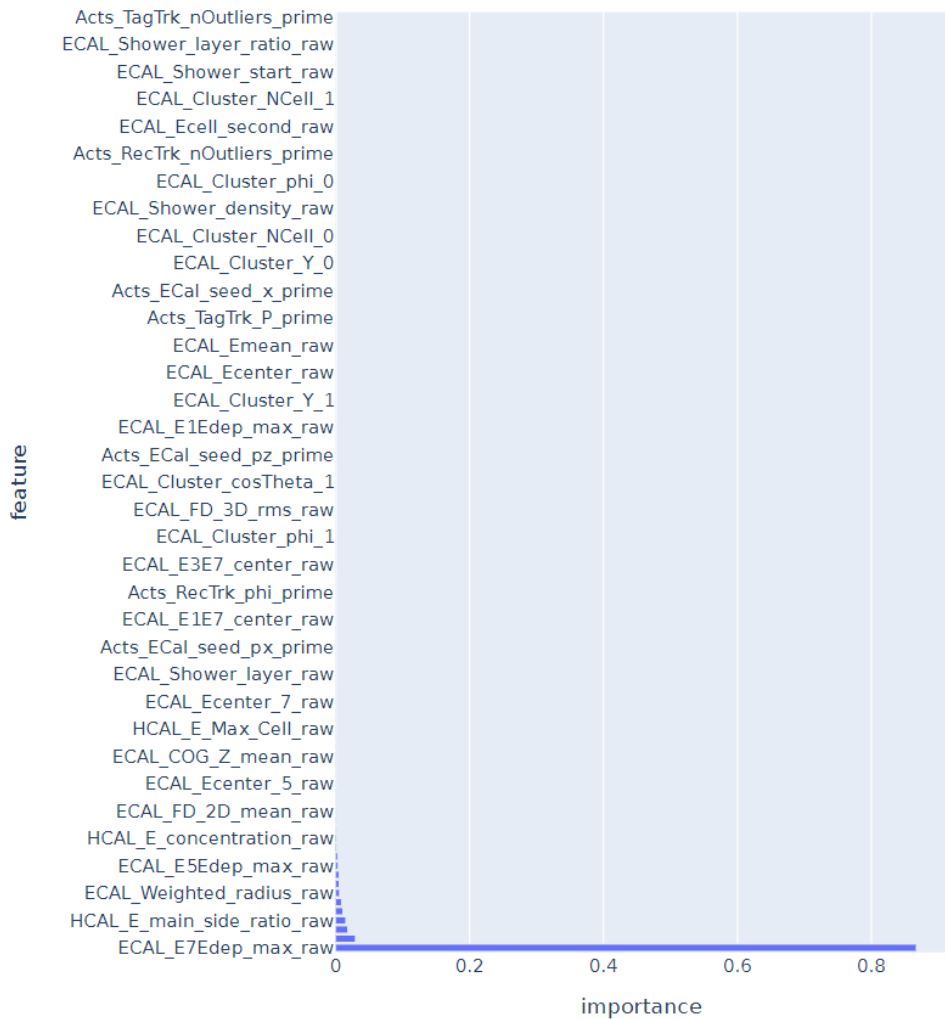# Importance Rank

Feature Importance for mAp 1 MeV


```
1    feature,importance
2    ECAL_E7Edep_max_raw,0.867254
3    SideHCAL_E_total_raw,0.029621497
4    ECAL_E_total_smear,0.018075129
5    HCAL_E_main_side_ratio_raw,0.015194224
6    HCAL_total_lighted_layer_raw,0.010780157
7    ECAL_E_total_raw,0.008751812
8    ECAL_Weighted_radius_raw,0.0059146797
9    ECAL_Shower_radius_raw,0.0052791247
10   HCAL_E_total_raw,0.0051435055
11   ECAL_E5Edep_max_raw,0.003824029
12   ECAL_NHits_raw,0.0033141926
13   HCAL_total_length_raw,0.0020608671
14   HCAL_E_concentration_raw,0.0020334644
15   ECAL_Hits_YWidth_raw,0.0011541457
16   HCAL_E_Max_layer_raw,0.0010096049
17   ECAL_FD_2D_mean_raw,0.00092078856
18   Acts_RecTrk_P_sub,0.00075625035
19   HCAL_E_Max_layer_num_raw,0.0007492049
20   ECAL_Ecenter_5_raw,0.00061188685
21   ECAL_Ecell_max_7_raw,0.0005956808
22   Acts_RecTrk_P_diff,0.0005825615
23   ECAL_COG_Z_mean_raw,0.00056587445
24   ECAL_FD_2D_rms_raw,0.000559389
25   ECAL_Cluster_E_1,0.00054930727
26   HCAL_E_Max_Cell_raw,0.0005390044
27   Acts_TagTrk_No,0.00053229375
28   Acts_RecTrk_No,0.0005223584
29   ECAL_Ecenter_7_raw,0.00051275163
30   Acts_RecTrk_theta_prime,0.0005043347
31   ECAL_Cluster_Width_Y_0,0.00043355473
32   ECAL_Shower_layer_raw,0.00039602534
33   Acts_ECal_seed_py_prime,0.00039452812
34   ECAL_Cluster_Z_0,0.0003912637
35   Acts_ECal_seed_px_prime,0.00038403133
36   HCAL_E_Min_Cell_raw,0.00038339876
```

Importance Rank

1MeV

```
1   feature,importance
2   ECAL_E7Edep_max_raw,0.867254
3   SideHCAL_E_total_raw,0.029621497
4   ECAL_E_total_smear,0.018075129
5   HCAL_E_main_side_ratio_raw,0.015194224
6   HCAL_total_lighted_layer_raw,0.010780157
7   ECAL_E_total_raw,0.008751812
8   ECAL_Weighted_radius_raw,0.0059146797
9   ECAL_Shower_radius_raw,0.0052791247
10  HCAL_E_total_raw,0.0051435055
11  ECAL_E5Edep_max_raw,0.003824029
12  ECAL_NHits_raw,0.0033141926
13  HCAL_total_length_raw,0.0020608671
14  HCAL_E_concentration_raw,0.0020334644
15  ECAL_Hits_YWidth_raw,0.0011541457
16  HCAL_E_Max_layer_raw,0.0010096049
17  ECAL_FD_2D_mean_raw,0.00092078856
18  Acts_RecTrk_P_sub,0.00075625035
19  HCAL_E_Max_layer_num_raw,0.0007492049
20  ECAL_Ecenter_5_raw,0.00061188685
21  ECAL_Ecell_max_7_raw,0.0005956808
22  Acts_RecTrk_P_diff,0.0005825615
23  ECAL_COG_Z_mean_raw,0.00056587445
24  ECAL_FD_2D_rms_raw,0.000559389
25  ECAL_Cluster_E_1,0.00054930727
26  HCAL_E_Max_Cell_raw,0.0005390044
27  Acts_TagTrk_No,0.00053229375
28  Acts_RecTrk_No,0.0005223584
29  ECAL_Ecenter_7_raw,0.00051275163
30  Acts_RecTrk_theta_prime,0.0005043347
31  ECAL_Cluster_Width_Y_0,0.00043355473
32  ECAL_Shower_layer_raw,0.00039602534
33  Acts_ECal_seed_py_prime,0.00039452812
34  ECAL_Cluster_Z_0,0.0003912637
35  Acts_ECal_seed_px_prime,0.00038403133
36  HCAL_E_Min_Cell_raw,0.00038339876
```

10MeV

```
1   feature,importance
2   ECAL_E7Edep_max_raw,0.4197839
3   HCAL_total_lighted_layer_raw,0.30471644
4   ECAL_E_total_smear,0.16519235
5   SideHCAL_E_total_raw,0.03038936
6   ECAL_E_total_raw,0.021499949
7   HCAL_E_main_side_ratio_raw,0.016096456
8   ECAL_Weighted_radius_raw,0.010393344
9   ECAL_NHits_raw,0.0060212975
10  ECAL_Ecell_max_7_raw,0.0052348957
11  HCAL_E_total_raw,0.0035826422
12  ECAL_Ecenter_7_raw,0.0014624783
13  HCAL_total_length_raw,0.001245447
14  HCAL_E_concentration_raw,0.00081523304
15  ECAL_Cluster_Width_Z_0,0.0006920775
16  HCAL_E_Min_Cell_raw,0.00065420184
17  ECAL_Cluster_N,0.00059144484
18  ECAL_Ecell_max_3_raw,0.0005470298
19  HCAL_E_Max_Cell_raw,0.0004370074
20  Acts_RecTrk_P_sub,0.00038469836
21  ECAL_COG_Z_mean_raw,0.00038058768
22  Acts_RecTrk_P_prime,0.00034323792
23  ECAL_E1E7_center_raw,0.00034217437
24  ECAL_Ecell_max_5_raw,0.0003355846
25  Acts_ECal_seed_px_prime,0.00032409184
26  ECAL_Cluster_Width_Y_0,0.0003195033
27  ECAL_Shower_radius_raw,0.0003173432
28  ECAL_Cluster_Width_X_0,0.00030433756
29  ECAL_Hits_ZDepth_raw,0.00029116852
30  ECAL_Cluster_Y_1,0.0002723308
31  ECAL_Hits_YWidth_raw,0.0002642196
32  Acts_TagTrk_No,0.00025682655
33  SideHCAL_E_Max_Cell_raw,0.0002562526
34  ECAL_Cluster_E_1,0.00025366305
35  ECAL_FD_2D_rms_raw,0.0002251188
36  ECAL_E3E7_center_raw,0.0002195474
```

100MeV

```
1   feature,importance
2   HCAL_total_lighted_layer_raw,0.5882824
3   ECAL_E7Edep_max_raw,0.16326407
4   ECAL_Weighted_radius_raw,0.15162869
5   ECAL_E_total_raw,0.047440104
6   SideHCAL_E_total_raw,0.0121311955
7   ECAL_NHits_raw,0.0110437665
8   ECAL_E_total_smear,0.0041648
9   ECAL_Ecell_max_3_raw,0.0014174898
10  ECAL_Cluster_N,0.0013051808
11  HCAL_E_total_raw,0.0011877057
12  HCAL_E_Max_layer_raw,0.0011509887
13  HCAL_E_Min_Cell_raw,0.0007629429
14  Acts_RecTrk_P_sub,0.0007280787
15  HCAL_total_length_raw,0.00069032516
16  Acts_missingP,0.0006416432
17  Acts_RecTrk_P_prime,0.0006128324
18  ECAL_Cluster_E_1,0.0006058929
19  ECAL_Cluster_Width_Y_0,0.00044706865
20  ECAL_Ecenter_7_raw,0.0004187652
21  ECAL_Shower_radius_raw,0.000417939
22  ECAL_Cluster_Z_0,0.0003942106
23  SideHCAL_E_Max_Cell_raw,0.000369658
24  HCAL_E_concentration_raw,0.00036548695
25  ECAL_FD_2D_mean_raw,0.00036276045
26  ECAL_Ecell_max_5_raw,0.00033778907
27  ECAL_COG_Z_mean_raw,0.0003313303
28  ECAL_Hits_ZDepth_raw,0.00029168252
29  Acts_RecTrk_theta_prime,0.00029104028
30  ECAL_Cluster_Width_X_0,0.0002908905
31  ECAL_Cluster_phi_1,0.00028638614
32  ECAL_E5Edep_max_raw,0.00028243999
33  HCAL_E_Max_Cell_raw,0.00027411172
34  ECAL_Cluster_X_1,0.00025789975
35  Acts_ECal_seed_py_prime,0.0002576249
36  HCAL_E_Max_layer_num_raw,0.0002479032
```

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