Data set

- Signal

/data/scratch/userspace/pretz/daqsim-reconstruction/output/daqsim-baseline-take4/gamma.xcd

- Background

/data/scratch/userspace/pretz/scrappy-platypus-optimization/datafiles/energy.dec20.run005481.xcd

Bin definition:

1. angular resolution bin (rec.predAngres) in step of 0.05 from 0 to 0.5.
2. ebin is rec.logNNEnergyV2 in step of 0.25 from 10 ^2.5 - 10^5.25

Events in each bin

angre bin 1

ebin	# gamma event	# hadron event
0	0	
1	0	
2	0	
3	0	
4	0	
5	105	62
6	3209	4979
7	8890	24905
8	9245	31401
9	6271	21144
10	4175	12143
11	2307	6720
Sum	34,202	101,354
Total	59,790	110,167

angre bin 2

ebin	# gamma event	# hadron event
0	0	
1	0	
2	0	
3	137	274
4	9469	12120
5	43934	85833
6	45347	151497
7	27422	132653
8	13123	72742
9	6074	28259
10	3699	11523
11	2097	5271
Sum	151,302	500,172
Total	252,258	510,562

angre bin 3

ebin	# gamma event	# hadron event
0	0	0
1	0	0
2	438	628
3	20119	15036
4	82220	83464
5	73603	119403
6	30527	84383
7	7985	56309
8	2484	34575
9	4053	14910
10	2111	6079
11	1365	2936
Sum	224,905	417,723
Total	373,195	422,697

Each bin use the delAngle cut and if the weight is 0, the event is not counted

Events in each bin

angre bin 4

ebin	# gamma event	# hadron event
0	0	
1	79	100
2	13370	7814
3	88922	46012
4	85697	64966
5	40685	47854
6	12784	38367
7	3090	32119
8	6818	24110
9	3197	11706
10	1705	4478
11	950	2014
Sum	257,297	279,540
Total	425,028	282,714

angre bin 5

ebin	# gamma event	# hadron event
0	7	
1	2485	2253
2	60743	22522
3	104968	43630
4	53875	31311
5	23848	21570
6	7350	18773
7	1942	17996
8	5133	15458
9	2398	8251
10	1240	3124
11	707	1446
Sum	264,696	186,334
Total	429,386	188,513

angre bin 6

ebin	# gamma event	# hadron event
0	191	452
1	15949	7810
2	100151	31923
3	79340	29897
4	33224	17065
5	16107	11930
6	4359	10205
7	5165	8724
8	3262	7582
9	1839	5219
10	1032	2273
11	589	1046
Sum	261,208	134,126
Total	412,594	135,769

Each bin use the delAngle cut and if the weight is 0, the event is not counted

Events in each bin

angre bin 7

ebin	# gamma event	# hadron event
0	1447	1760
1	40990	16613
2	100780	31801
3	54886	20202
4	23570	11010
5	11387	6372
6	2313	2416
7	224	455
8	26	
9	81	
10	121	100
11	84	
Sum	235,909	90,729
Total	369,008	92,038

angre bin 8

ebin	# gamma event	# hadron event
0	5388	4641
1	65028	25449
2	83852	28523
3	38241	15384
4	17246	7670
5	7653	3052
6	184	657
7	5	
8	0	
9	0	
10	0	
11	0	
Sum	217,597	85,376
Total	340,777	86,714

angre bin 9

ebin	# gamma event	# hadron event
0	13686	9402
1	75597	30772
2	65714	25334
3	28716	12442
4	12554	5344
5	3032	1422
6	46	
7	0	
8	0	
9	0	
10	0	
11	0	
Sum	199,345	84,716
Total	311,157	86,695

Each bin use the delAngle cut and if the weight is 0, the event is not counted

Training

angre bin	Signal	bkg
0	0	0
1	59,790	110,167
2	252,258	510,562
3	373,195	422,697
4	425,028	282,714
5	429,386	188,513
6	412,594	135,769
7	369,008	92,038
8	340,777	86,714
9	311,157	86,695

Use all events, that is, without any cuts

if the NN was trained with ebin

ebin	Sig	Bkg
0	20719	16355
1	200128	82997
2	425048	148545
3	415329	182877
4	317855	232950
5	220354	297498
6	106119	311277
7	54723	273161
8	40091	185868
9	23913	89489
10	14083	39720
11	8099	19433

The sum all event in each energy bin in the previous tables.

Backslide:

Bins:

1. angular resolution bin (rec.predAngres) in step of 0.05 from 0 to 0.5.
2. ebin is rec.logNNEnergyV2 in step of 0.25 from 10 ^2.5 - 10^5.25

ebin	min ebin	max	min ebin (GeV)	max bin (Gev)
0	2.50	2.75	316.23	562.34
1	2.75	3.00	562.34	1,000.00
2	3.00	3.25	1,000.00	1,778.28
3	3.25	3.50	1,778.28	3,162.28
4	3.50	3.75	3,162.28	5,623.41
5	3.75	4.00	5,623.41	10,000.00
6	4.00	4.25	10,000.00	17,782.79
7	4.25	4.50	17,782.79	31,622.78
8	4.50	4.75	31,622.78	56,234.13
9	4.75	5.00	56,234.13	100,000.00
10	5.00	5.25	100,000.00	177,827.94
11	5.25	5.50	177,827.94	316,227.77

angre	min	max
0	0.00	0.05
1	0.05	0.10
2	0.10	0.15
3	0.15	0.20
4	0.20	0.25
5	0.25	0.30
6	0.30	0.35
7	0.35	0.40
8	0.40	0.45
9	0.45	0.50