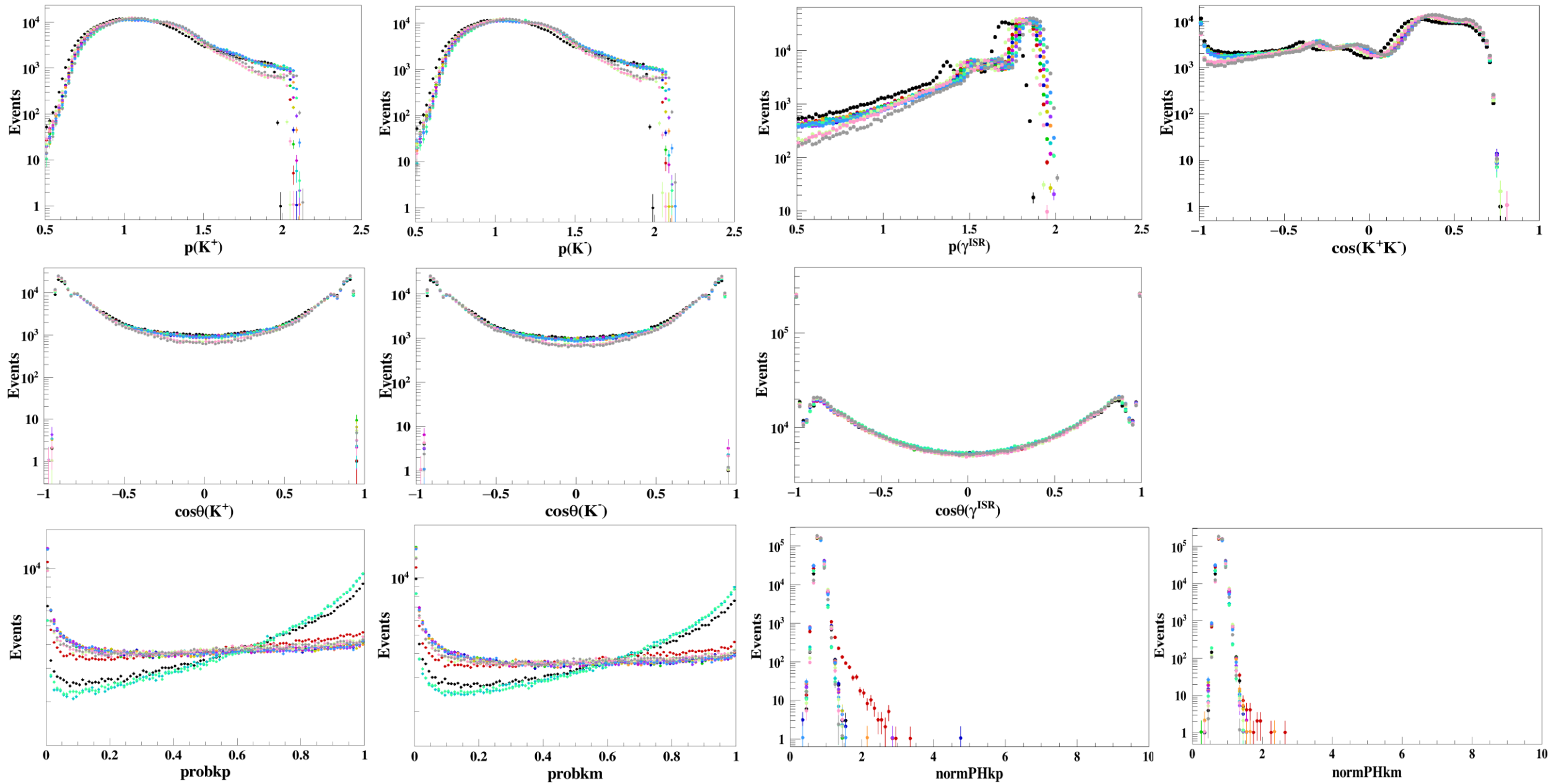
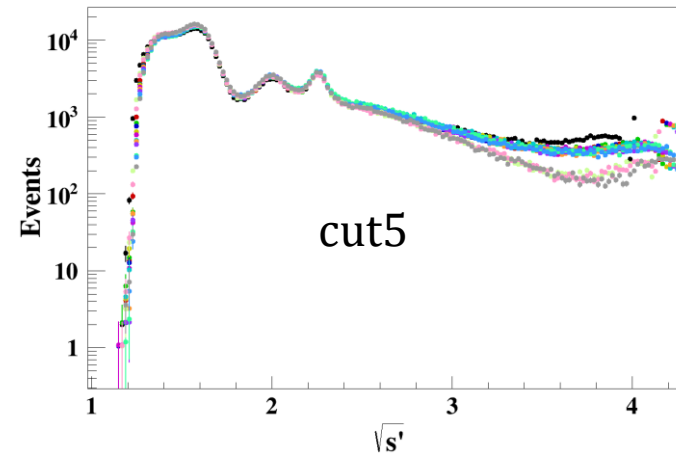
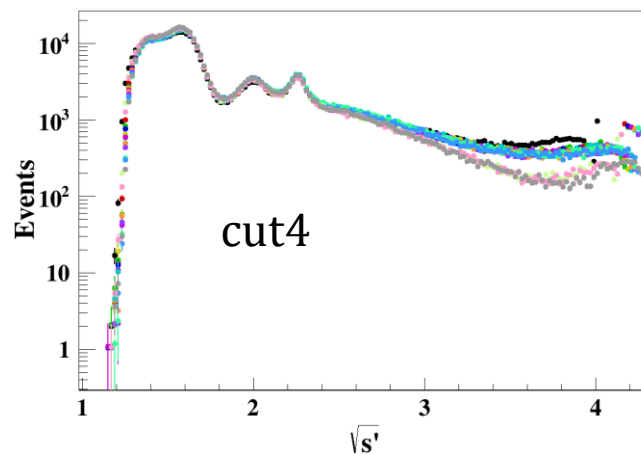
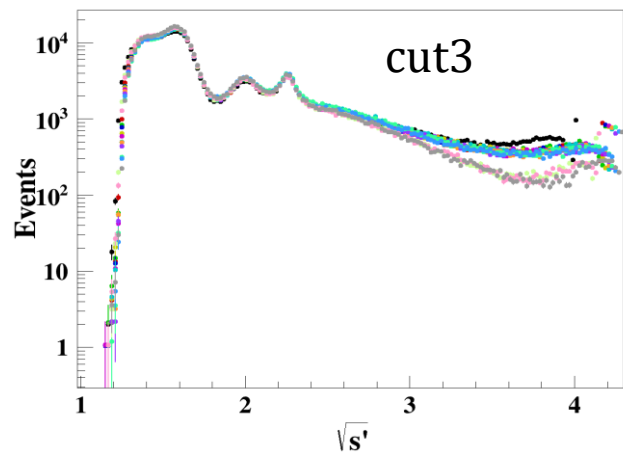
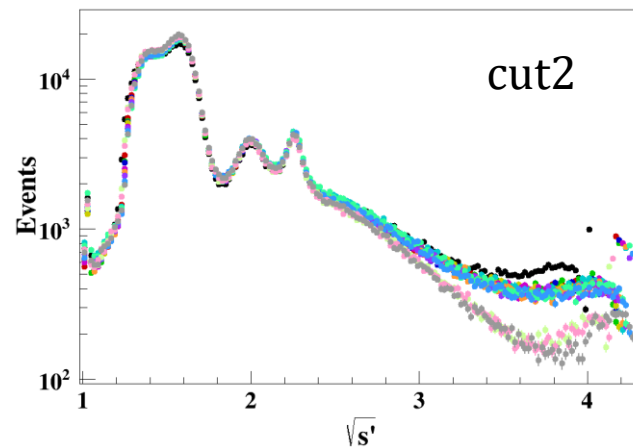
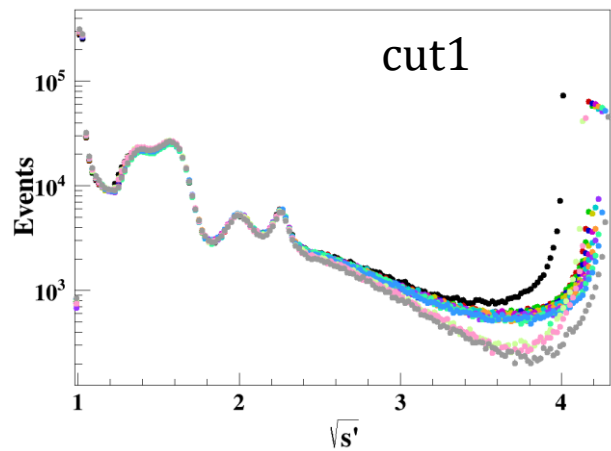


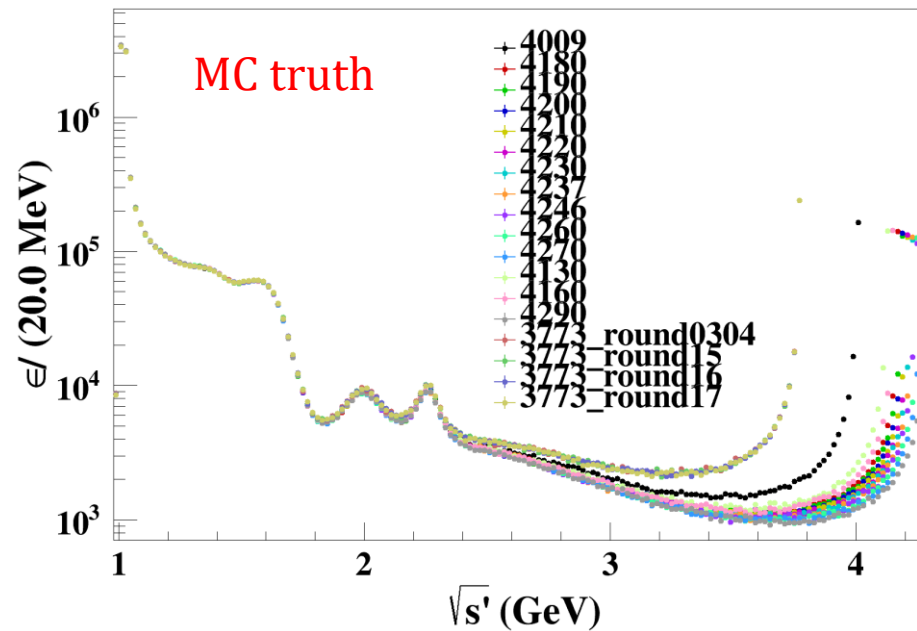
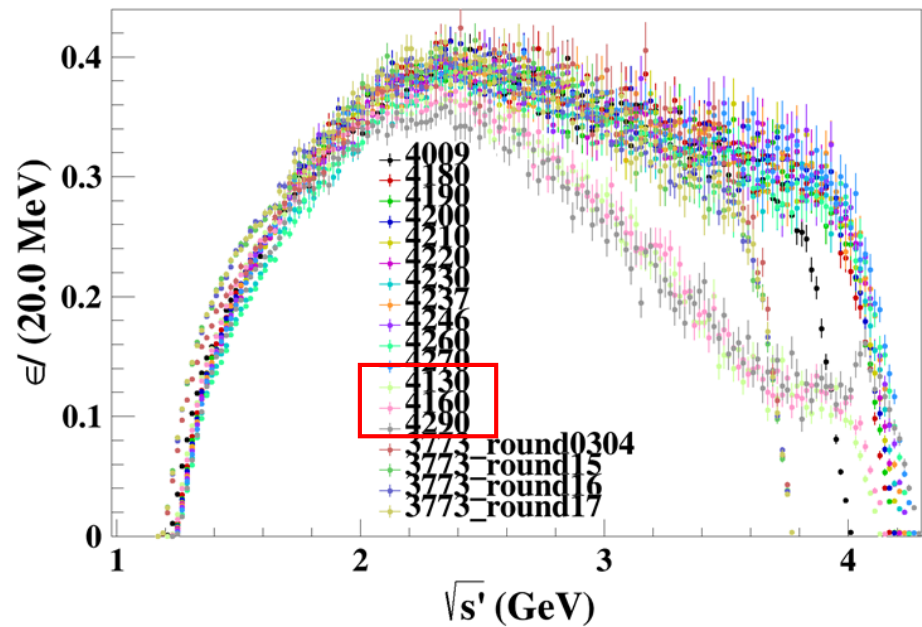
Cut Flow

BOSS/Ecms	703/4200		703/4180		705/4160	
Selection	Absolute Efficiency	Relative Efficiency	Absolute Efficiency	Relative Efficiency	Absolute Efficiency	Relative Efficiency
$N_{\text{Good}} \geq 2$	18.93 %	18.93 %	18.98 %	18.98 %	19.03 %	19.03 %
$N_{\text{Kaon}} \geq 2$	14.38 %	75.95 %	14.45 %	76.15 %	14.07 %	73.9 %
Vertex Fit	14.35 %	99.84 %	14.42 %	99.81 %	14.05 %	99.89 %
$ \cos\theta^{\text{ISR}} \geq 0.99$	4.67 %	32.54 %	4.71%	32.68 %	4.61 %	32.79 %
$ U_{\text{miss}} \leq 0.1$	3.69 %	79.02 %	3.74 %	79.25 %	3.62 %	78.52 %
E/p	3.68 %	99.63 %	3.72 %	99.62 %	3.60 %	99.59 %
$N_{\text{Good}} = 2$	3.67 %	99.92 %	3.72 %	99.91 %	3.60 %	99.90 %



Which cut results in thus big difference?





BOSS Version & Data Sets

➤ Datasets:

2017 4190--4280 MeV

Sample	Runno	Ecms(MeV)	luminosity(1/pb)	location
4190	47543-48170	4188.8+/-0.41	526.7±0.1±2.2	/besfs3/offline/data/703-1/xyz/round10
4200	48172-48713	4198.9+/-0.41	526.0±0.1±2.5	/besfs3/offline/data/703-1/xyz/round10
4210	48714-49239	4209.2+/-0.42	517.1±0.1±1.8	/besfs3/offline/data/703-1/xyz/round10
4220	49270-49787	4218.7+/-0.40	514.6±0.1±1.8	/besfs3/offline/data/703-1/xyz/round10
4237	49788-50254	4235.7+/-0.38	530.3±0.1±2.4	/besfs3/offline/data/703-1/xyz/round10
4246	50255-50793	4243.8+/-0.38	538.1±0.1±2.7	/besfs3/offline/data/703-1/xyz/round10
4270	50796-51302	4266.8+/-0.40	531.1±0.1±3.1	/besfs3/offline/data/703-1/xyz/round10
4280	51303-51498	4277.7+/-0.58	175.7±0.1±1.0	/besfs3/offline/data/703-1/xyz/round10

2012-2013 @4260 MeV AND SCAN

Sample	Ecms	luminosity	Runno	location
3810	3807.65±0.10±0.58	50.54±0.03±0.49	33490--33556	/besfs3/offline/data/703-1/xyz/round06/4260scan/3810/dst/
3900	3896.24±0.11±0.72	52.61±0.03±0.51	33572-33657	/besfs3/offline/data/703-1/xyz/round06/4260scan/3900/dst/
4009	4007.62±0.05±0.66	482.0±0.1±4.7	23463-24141	/besfs3/offline/data/703-1/xyz/round04/4040/dst/
4090	4085.45±0.14±0.66	52.86±0.03±0.35	33659-33719	/besfs3/offline/data/703-1/xyz/round06/4260scan/4090/dst/
4190	4188.59±0.15±0.68	43.33±0.03±0.29	30372-30437	/besfs3/offline/data/703-1/xyz/round06/4260scan/4190/dst/
4210	4207.73±0.14±0.61	54.95±0.03±0.36	31983-32045	/besfs3/offline/data/703-1/xyz/round06/4260scan/4210/dst/
4220	4217.13±0.14±0.67	54.60±0.03±0.36	32046-32140	/besfs3/offline/data/703-1/xyz/round06/4260scan/4220/dst/
4230	4226.26±0.04±0.65	44.54 ± 0.03 ± 0.29; 1056.4 ± 0.1 ± 7.0	30438-30491,32239-33484	/besfs3/offline/data/703-1/xyz/round06/4260scan/4230/dst/ /besfs3/offline/data/703-1/xyz/round06/4230/dst/
4245	4241.66±0.12±0.73	55.88±0.03±0.37	32141-32226	/besfs3/offline/data/703-1/xyz/round06/4260scan/4245/dst/
4260	4257.97±0.04±0.66	828.4±0.1±5.5	29677-30367,31561-31981	/besfs3/offline/data/703-1/xyz/round06/4260/dst/
4310	4307.89±0.17±0.63	45.08±0.03±0.30	30492-30557	/besfs3/offline/data/703-1/xyz/round06/4260scan/4310/dst/
4360	4358.26±0.05±0.62	543.9±0.1±3.6	30616-31279	/besfs3/offline/data/703-1/xyz/round06/4360/dst/
4390	4387.40±0.17±0.65	55.57±0.03±0.37	31281-31325	/besfs3/offline/data/703-1/xyz/round06/4360scan/4390/dst/
4420	4415.58±0.04±0.72	46.80±0.03±0.31; 1043.9 ± 0.1 ± 6.9	31327-31390,36773--38140	/besfs3/offline/data/703-1/xyz/round06/4360scan/4420/dst/; /besfs3/offline/data/703-1/xyz/round07/4420/dst/
4470	4467.06±0.11±0.73	111.09±0.04±0.73	36245-36393	/besfs3/offline/data/703-1/xyz/round07/4470/dst/
4530	4527.14±0.11±0.72	112.12±0.04±0.74	36398-36588	/besfs3/offline/data/703-1/xyz/round07/4530/dst/
4575	4574.50±0.18±0.70	48.93±0.03±0.02	36603-36699	/besfs3/offline/data/703-1/xyz/round07/4575/dst/
4600	4599.53±0.07±0.74	586.9±0.1±3.9	35227-36213	/besfs3/offline/data/703-1/xyz/round07/4600/dst/

2019 4130, 4160, 4290--4440 MeV

Sample	Runno	Ecms(MeV)	luminosity(1/pb)	location
4130	59163-59573	4128.48+/-0.44	401.5(online)	/besfs4/offline/data/705-1/xyz/round12/4130/dst
4160	59574-59896	4157.44+/-0.44	408.7(online)	/besfs4/offline/data/705-1/xyz/round12/4160/dst
4290	59902-60363	4287.88+/-0.43	502.4(online)	/besfs4/offline/data/705-1/xyz/round12/4290/dst
4315	60364-60805	4312.05+/-0.44	501.2(online)	/besfs4/offline/data/705-1/xyz/round12/4315/dst
4340	60808-61242	4337.39+/-0.44	505.0(online)	/besfs4/offline/data/705-1/xyz/round12/4340/dst
4380	61249-61762	4377.37+/-0.44	522.7(online)	/besfs4/offline/data/705-1/xyz/round12/4380/dst
4400	61763-62285	4396.45+/-0.45	507.8(online)	/besfs4/offline/data/705-1/xyz/round12/4400/dst
4440	62286-62823	4436.24+/-0.44	569.9(online)	/besfs4/offline/data/705-1/xyz/round12/4440/dst

\sqrt{s} (MeV)	Integrated luminosity (pb^{-1})	Run Number	BOSS version
3807.65	50.54	33490 - 33556	7.0.3
3869.4	219.2	52108 - 52297	
3896.24	52.61	33572 - 33657	
4007.62	482.0	23463 - 24141	
4085.45	52.86	33659 - 33719	
4178.37	3194.5	43716 - 47066	
4188.78	570.03	30372-30437, 47543-48170	
4198.9	526.0	48172 - 48713	
4209.06	572.05	31983-32045, 48714-49239	
4218.55	569.2	32046-32140, 49270-49787	
4226.26	1100.94	30438-30491, 32239-33484	
4235.7	530.3	49788 - 50254	
4243.6	593.98	32141-32226, 50255-50793	
4257.97	828.4	29677-30367, 31561-31981	
4266.8	531.1	50796 - 51302	
4277.8	175.7	51303 - 51498	
4307.89	45.08	30492 - 30557	
4358.26	543.9	30616 - 31279	
4387.40	55.57	31281 - 31325	
4415.58	1090.7	31327-31390, 36773-38140	
4467.06	111.09	36245 - 36393	
4527.14	112.12	36398 - 36588	
4574.50	48.93	36603 - 36699	
4599.53	586.9	35227 - 36213	
4128.48	401.5	59163 - 59573	7.0.5
4157.44	408.7	59574 - 59896	
4287.88	502.4	59902 - 60363	
4312.05	501.2	60364 - 60805	
4337.39	505.0	60808 - 61242	
4377.37	522.7	61249 - 61762	
4396.45	507.8	61763 - 62285	
4436.24	569.9	62286 - 62823	