

Check on Drell-Yan dataset merging

Stefano Lacaprara

INFN Padova

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- We have many different datasets for Drell-Yan;
- One inclusive, and many exclusive in number of partons ($N_p = 0, 1, 2, 3, 4$), p_T^Z (50 – 70, 70 – 100, 100–, 180–) and H_T (200 – 400, 400–);
- A complex procedure has been put in place to merge all the dataset exploiting the full statistical power of the datasets.
- This requires a reweighting of the datasets

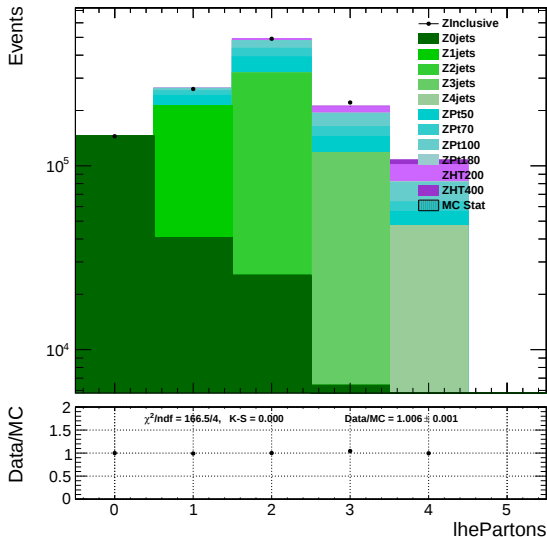
$$w_i = \frac{N_i}{\sum_{j=0}^n N_{ij}}$$

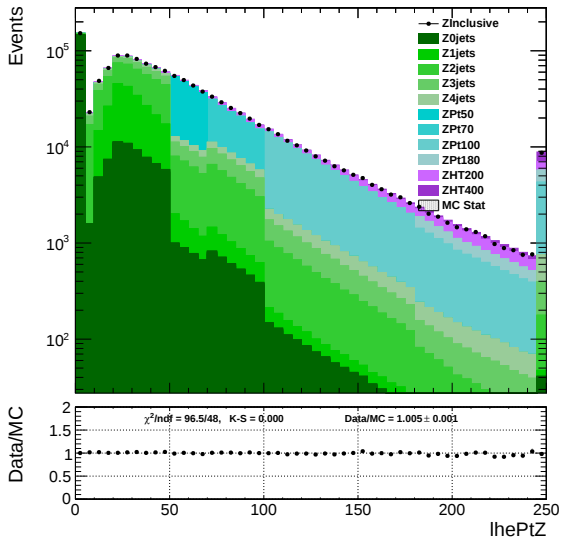
where N_i is the number of events of the dataset i , and N_{ij} is the number of events of the dataset i in the bin j , and n is the number of different bins in the (N_p, p_T^Z, H_T) space.

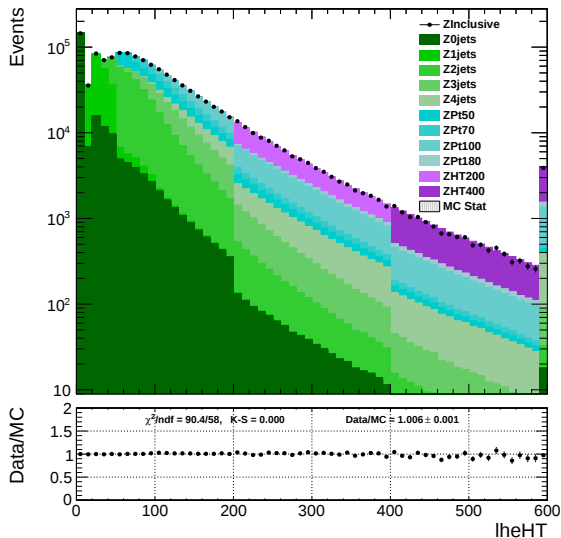
- Here I check different distribution for the inclusive sample and the merged ones, in order to ensure that no issue are present in the merging procedure.

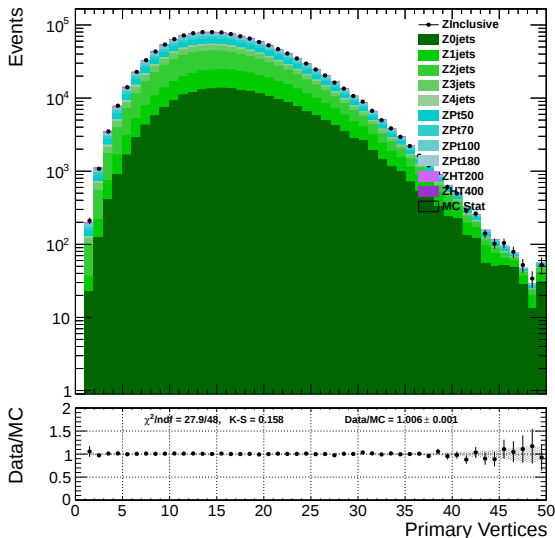
Datasets used

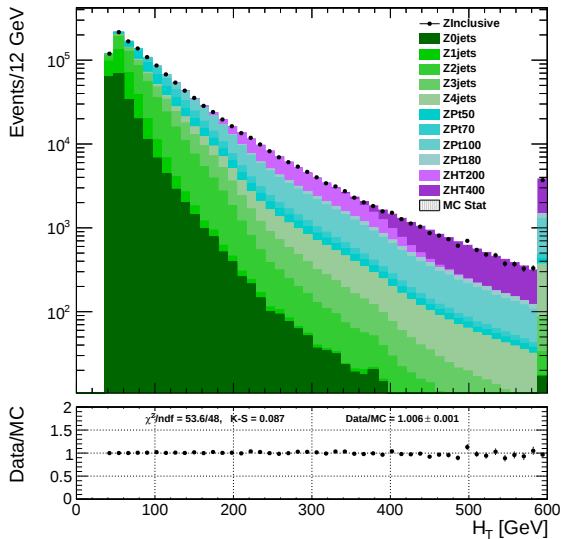
Dataset	Events	$\sigma \times \mathcal{B}[\text{pb}]$	$\int \mathcal{L} dt [\text{fb}^{-1}]$
DYJetsToLL_M-50_TuneZ2Star_8TeV	30 459 503	3 503.71	8.693
DY1JetsToLL_M-50_TuneZ2Star_8TeV	24 045 248	666.30	36.087
DY2JetsToLL_M-50_TuneZ2Star_8TeV	21 852 156	214.97	101.650
DY3JetsToLL_M-50_TuneZ2Star_8TeV	11 015 445	60.69	181.499
DY4JetsToLL_M-50_TuneZ2Star_8TeV	6 402 827	27.36	233.982
DYJetsToLL_PtZ-50To70_TuneZ2star_8TeV	4 930 773	111.41	44.259
DYJetsToLL_PtZ-50To70_TuneZ2star_8TeV_ext	16 577 089	105.71	156.823
DYJetsToLL_PtZ-70To100_TuneZ2star_8TeV	1 413 395	62.13	22.749
DYJetsToLL_PtZ-70To100_TuneZ2star_8TeV_ext	11 764 538	62.95	186.892
DYJetsToLL_PtZ-100_TuneZ2star_8TeV	2 662 137	40.50	65.730
DYJetsToLL_PtZ-100_TuneZ2star_8TeV_ext	12 511 326	39.08	320.185
DYJetsToLL_PtZ-180_TuneZ2star_8TeV	1 555 476	5.42	287.205
DYJetsToLL_HT-200To400_TuneZ2Star_8TeV	3 789 889	19.73	161.731
DYJetsToLL_HT-200To400_TuneZ2Star_8TeV_ext	3 118 888	19.73	133.096
DYJetsToLL_HT-400ToInf_TuneZ2Star_8TeV	1 703 863	2.826	507.640
DYJetsToLL_HT-400ToInf_TuneZ2Star_8TeV_ext	1 023 926	2.826	305.063

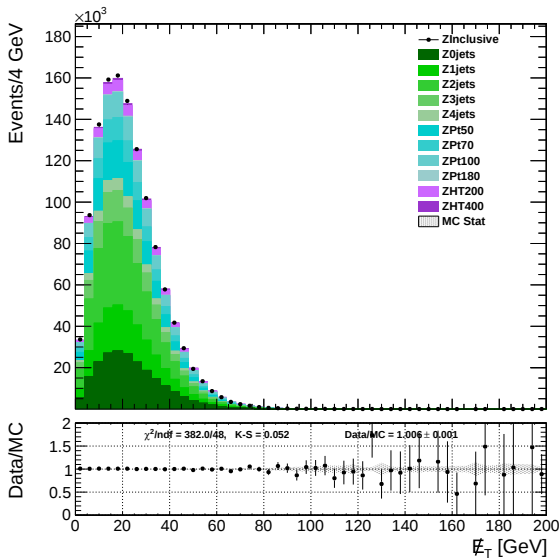


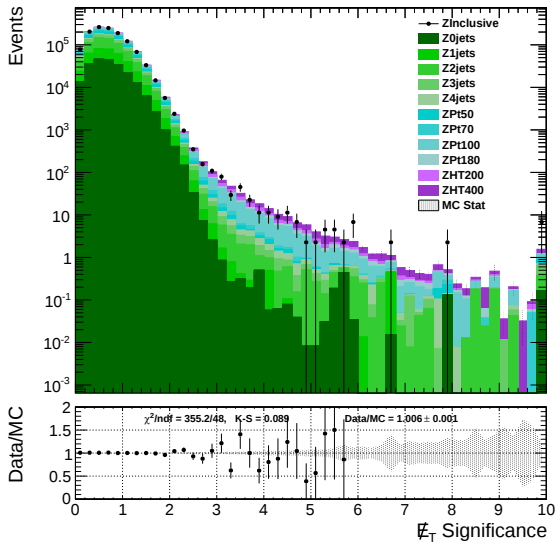




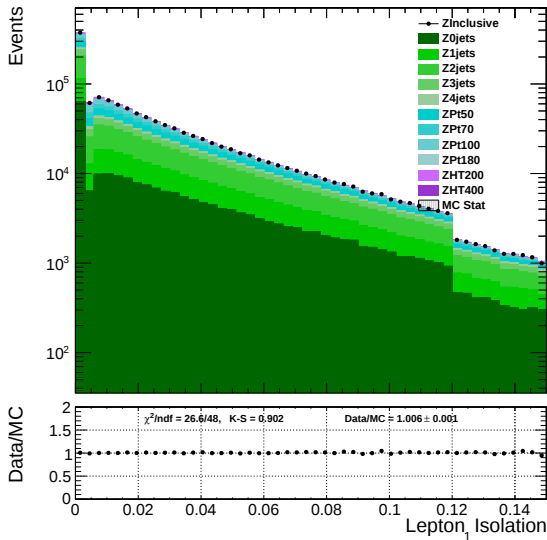


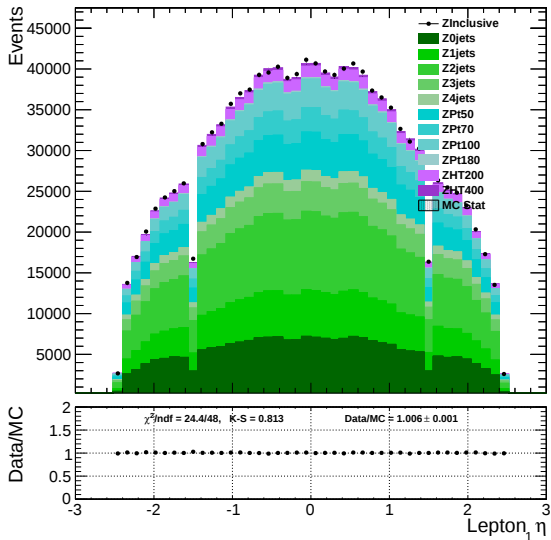


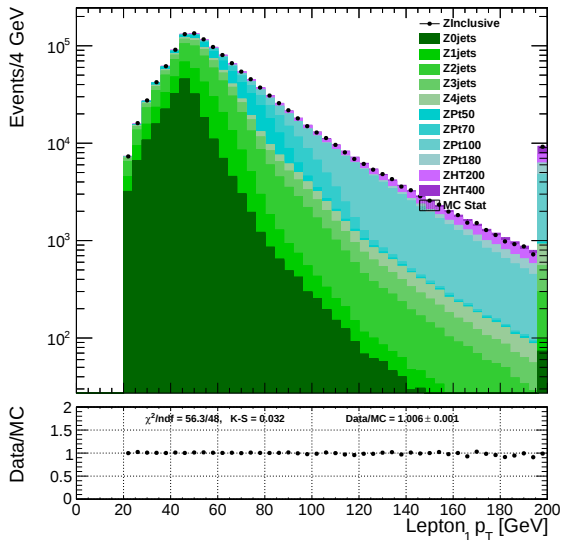


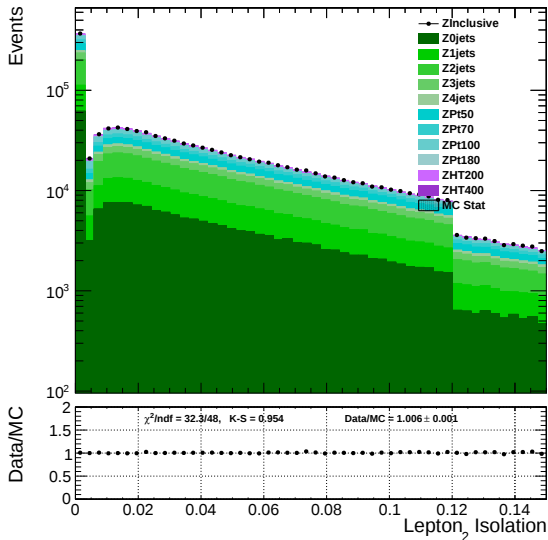


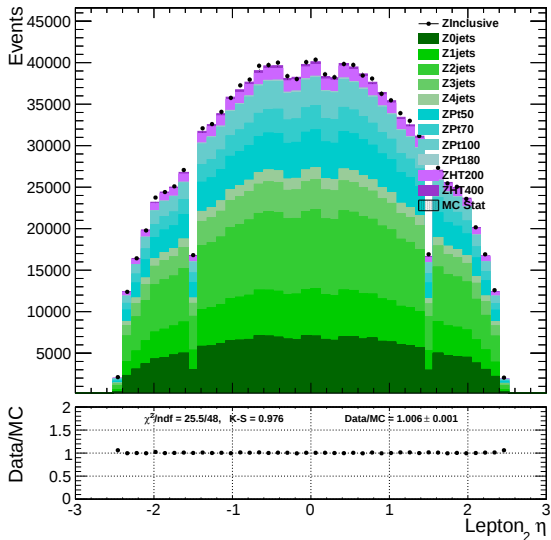
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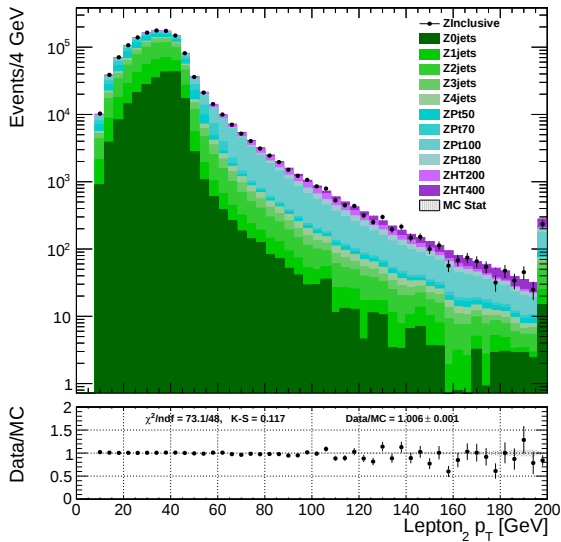


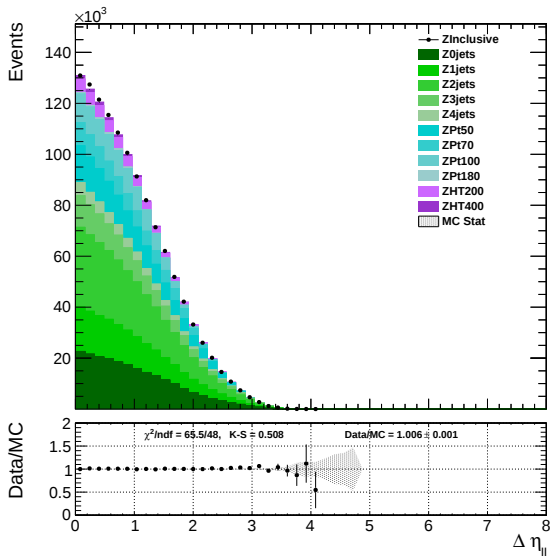


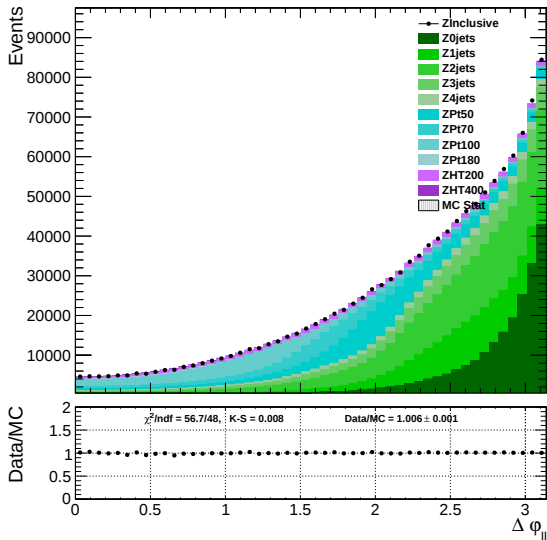


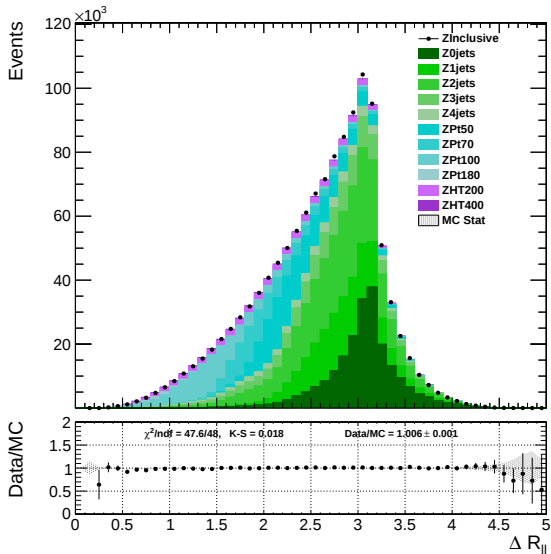


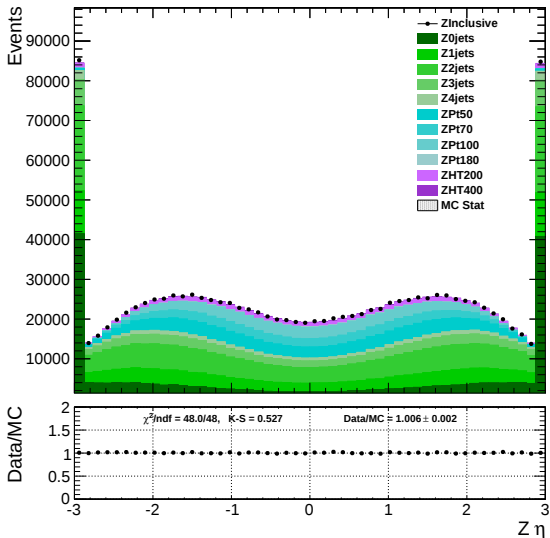


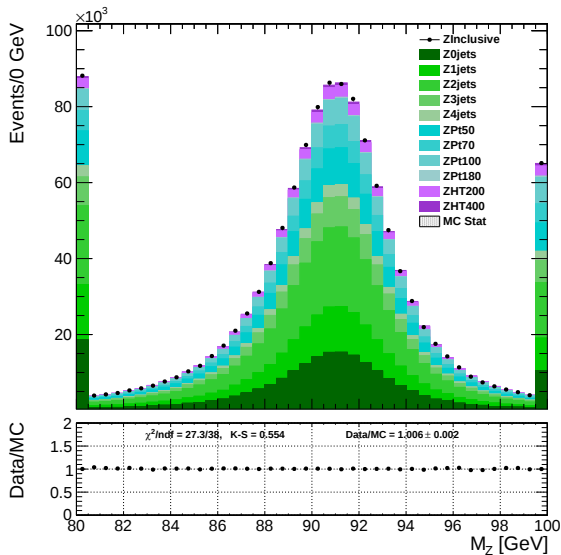


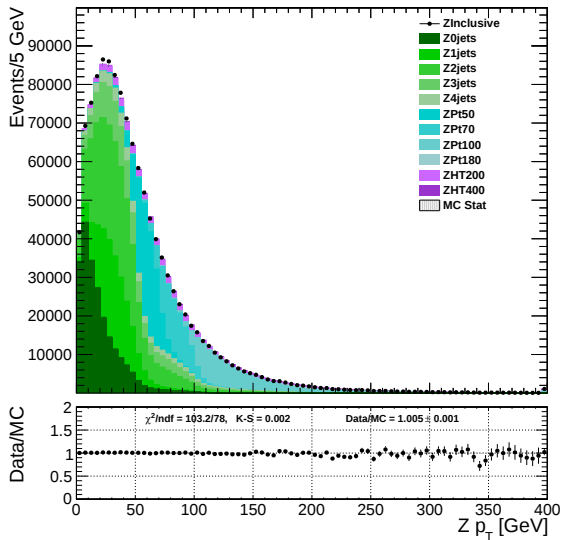


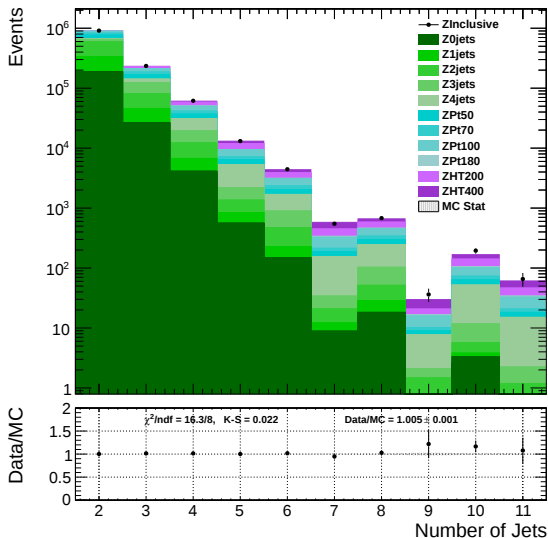


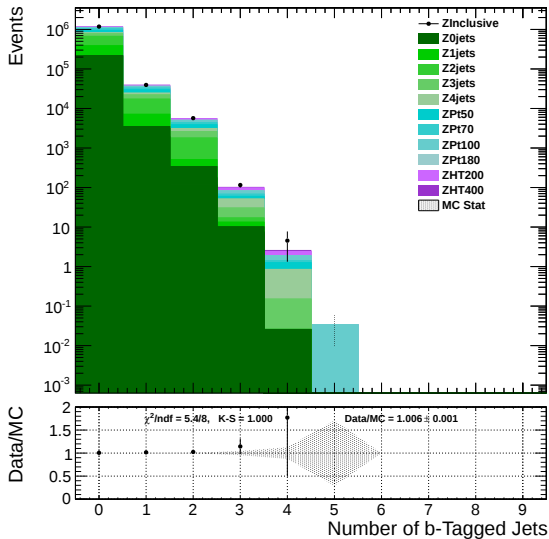


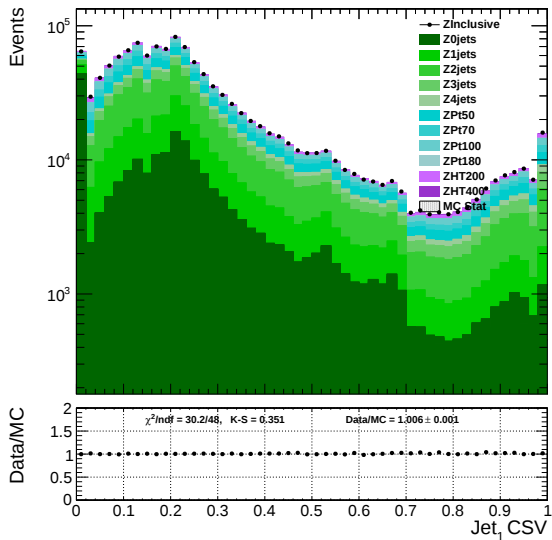


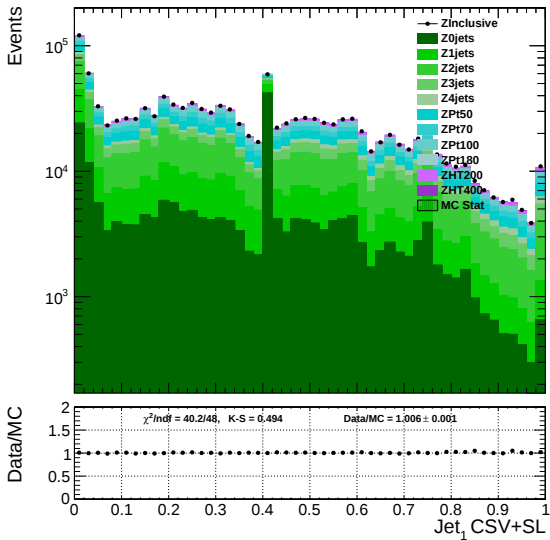


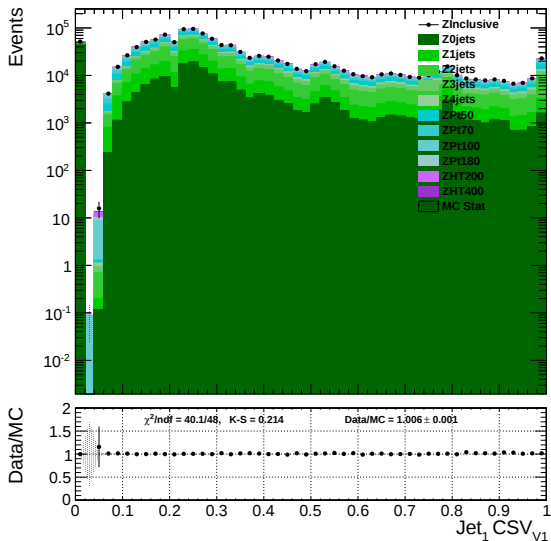


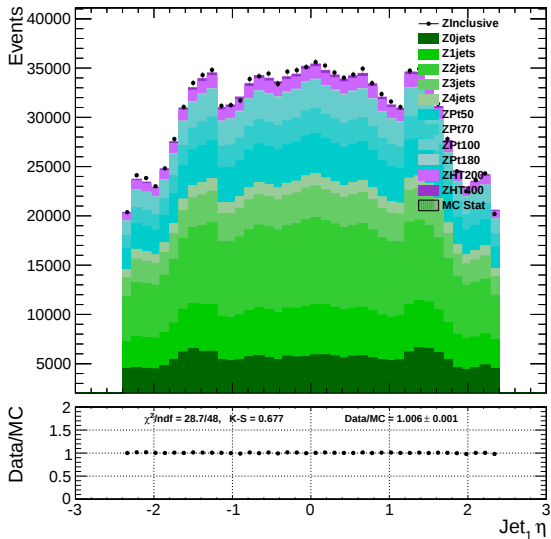


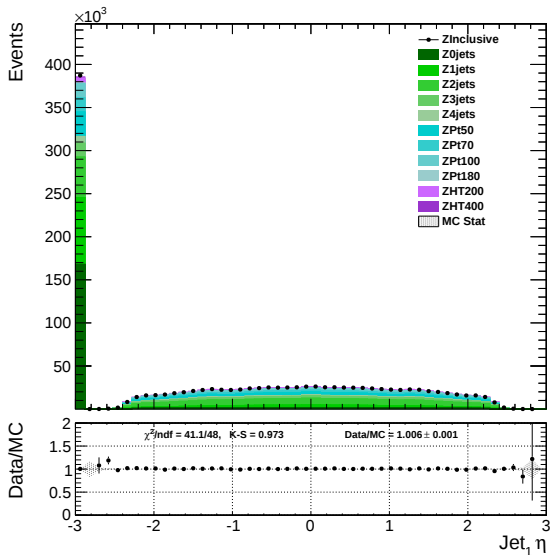


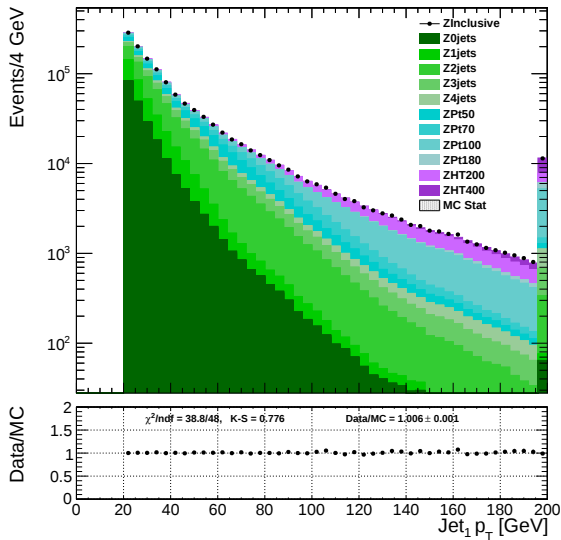


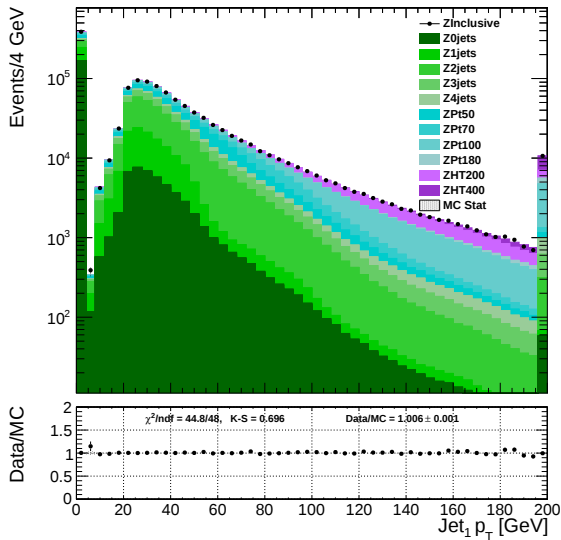


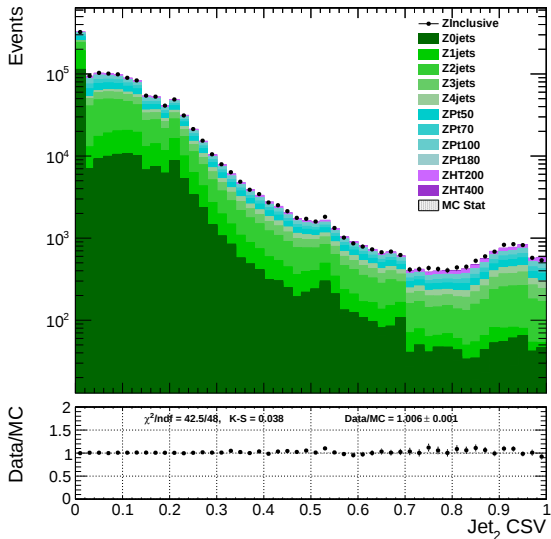


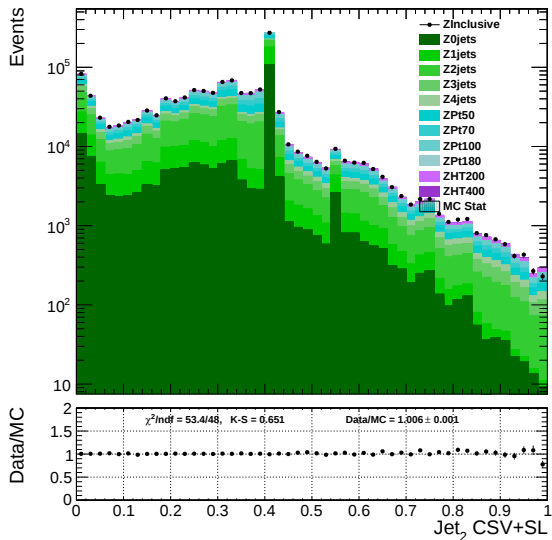


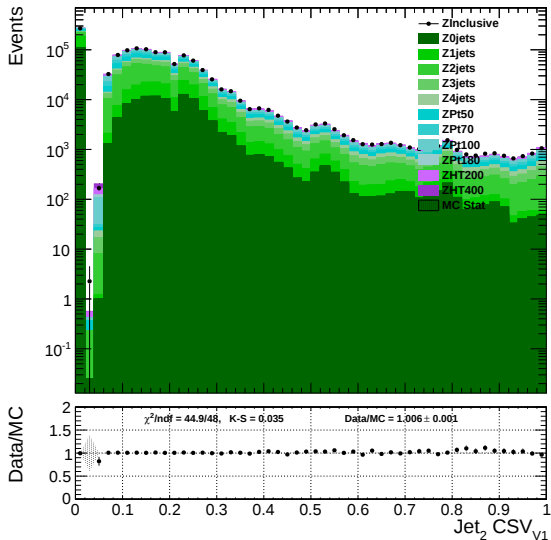


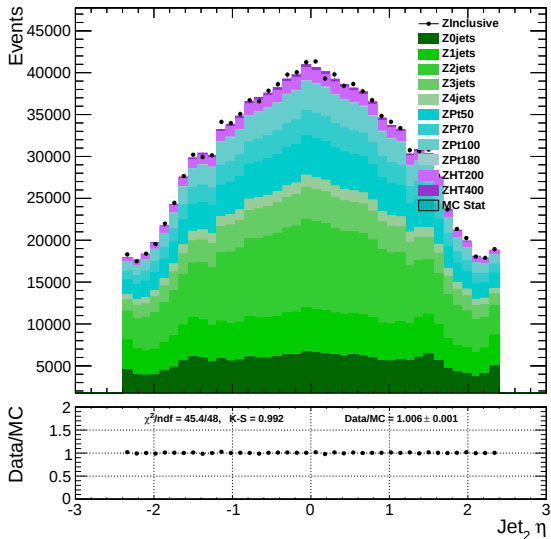


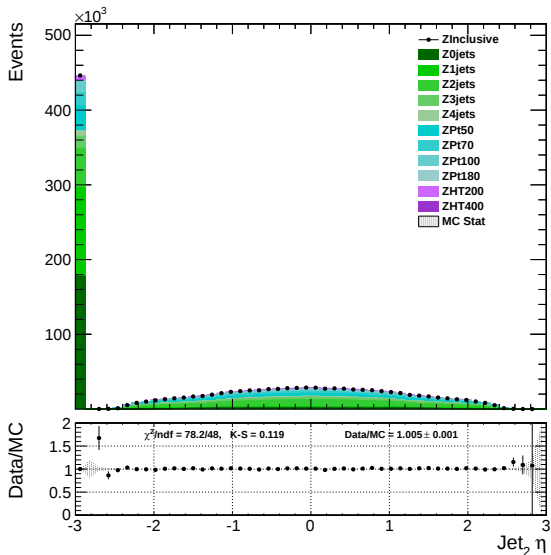


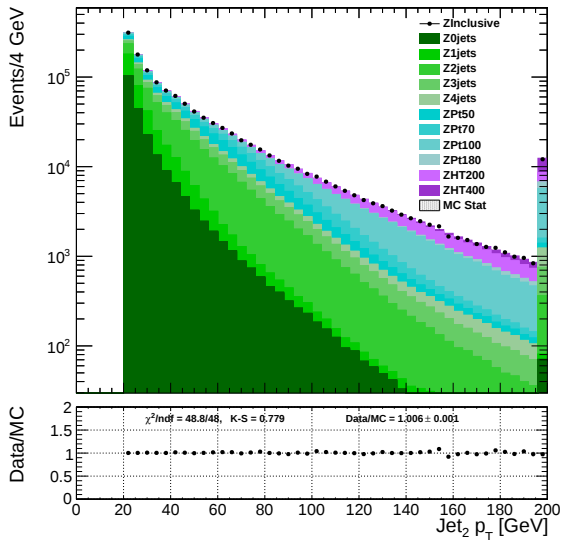


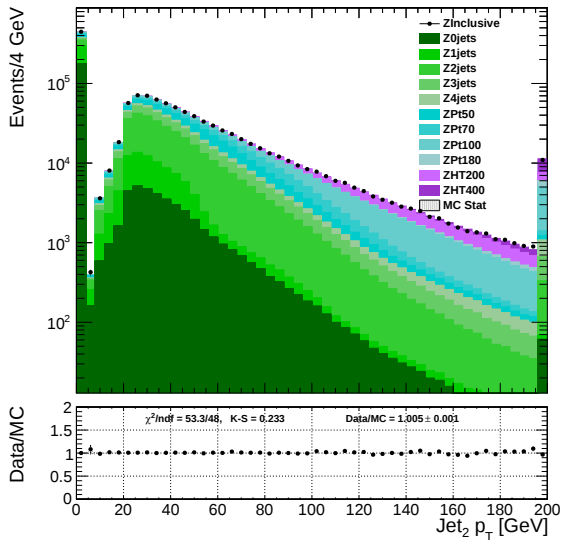


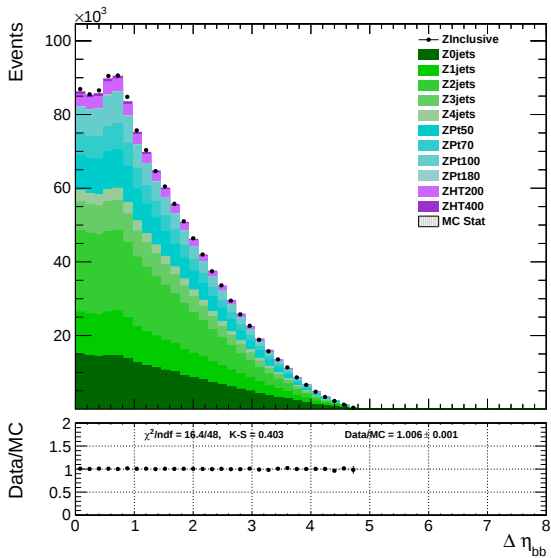


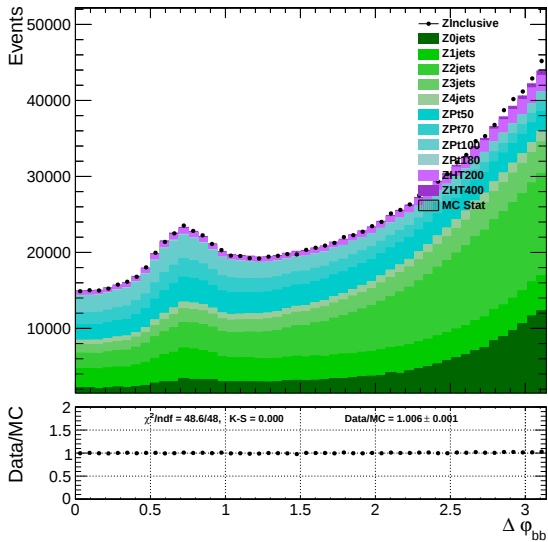


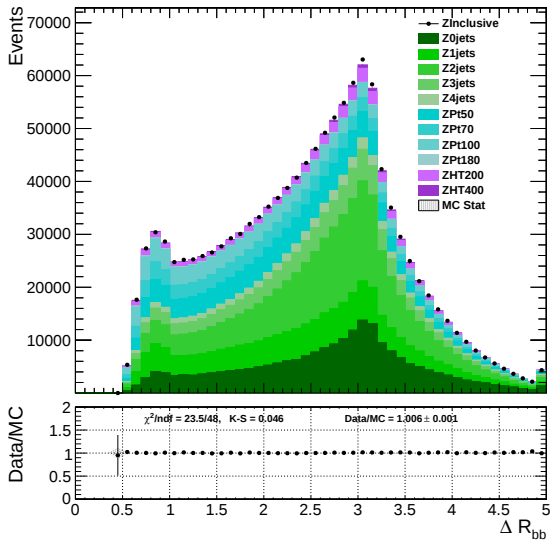


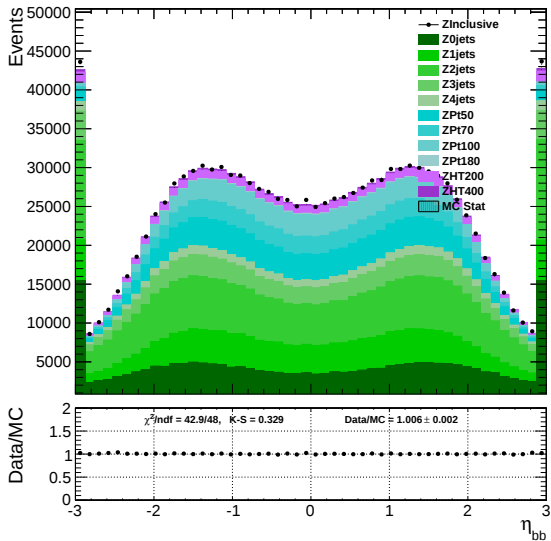


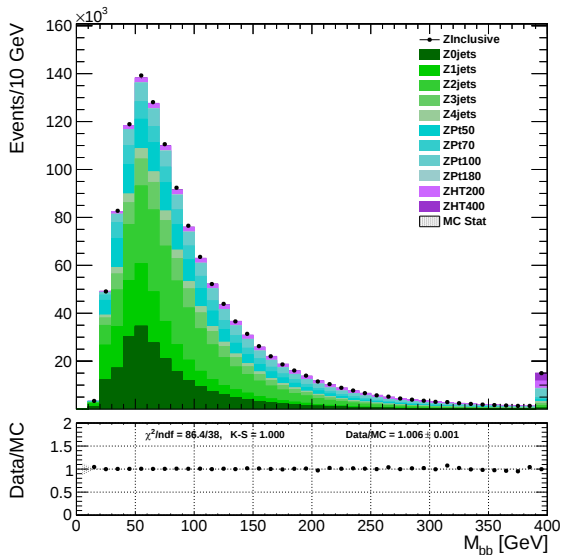


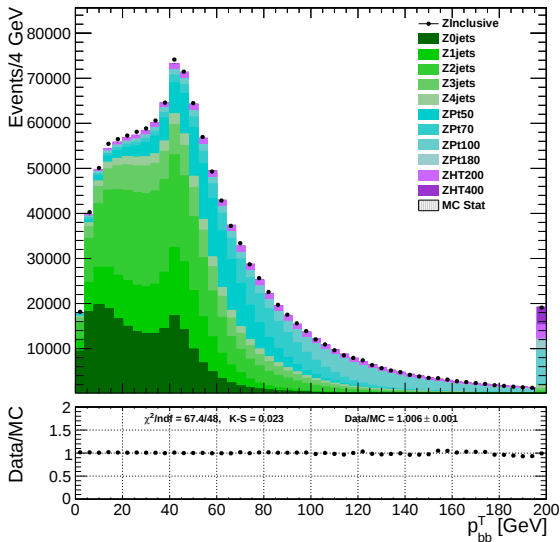


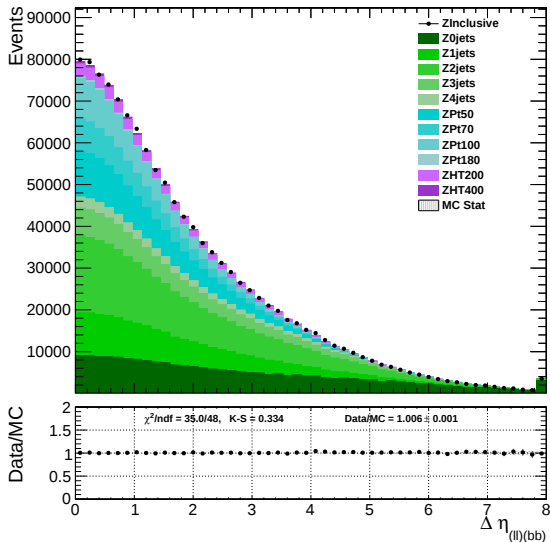


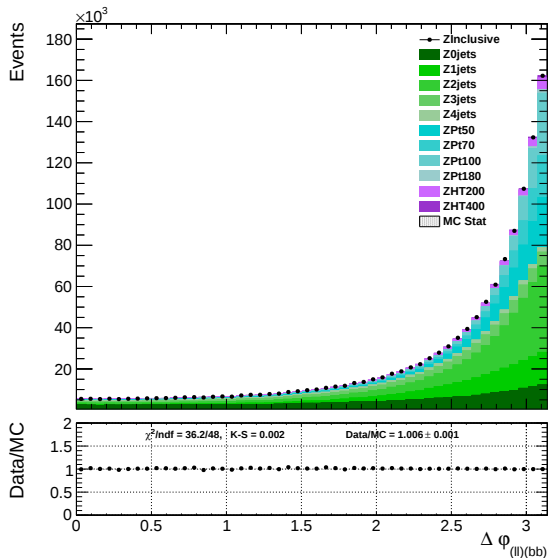


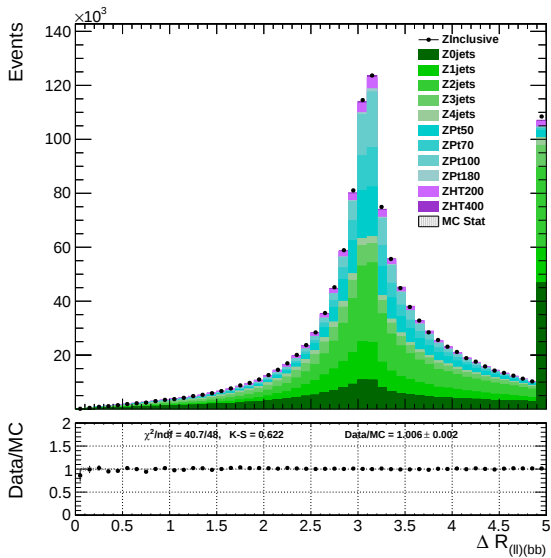


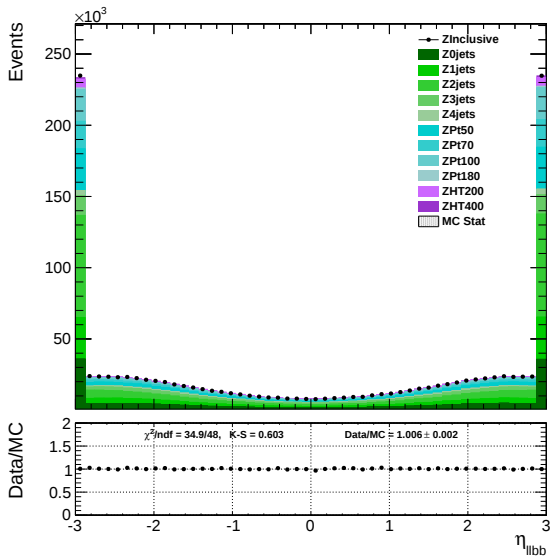




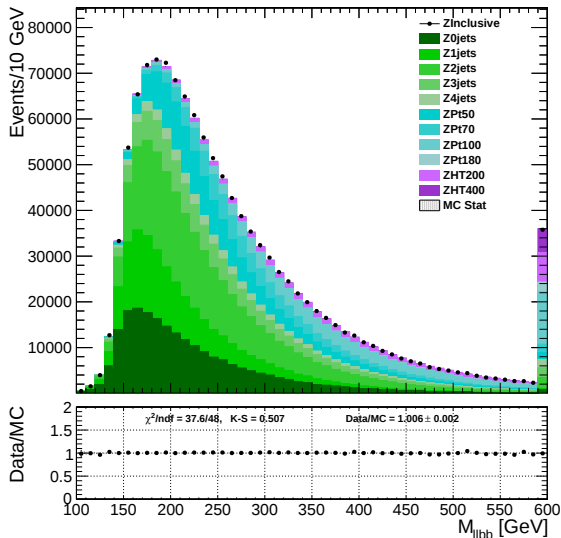


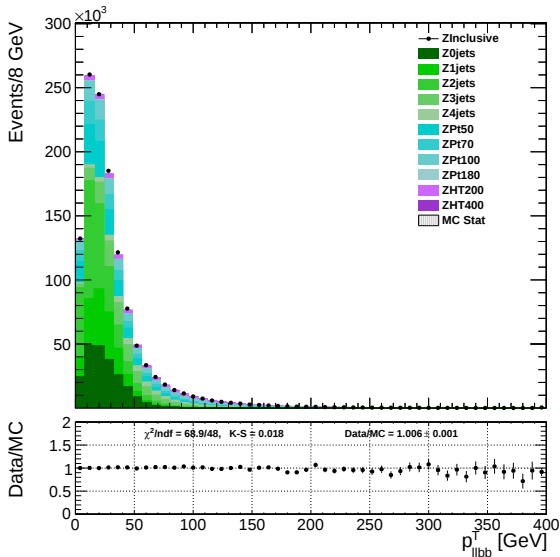






A mass





A ptBalance

