

Z production

PRE-PRE-PPROVAL



ZtoLL10-50

ZtoLL50-

ZtoNuNu



Production recipe

Production recipe = exclusive mode + "no masses"

	0 jet	1 jet	2 jet	3 jet Subprocess splitting	4 jet Subprocess splitting
ZToLL10-50	Green	Green	Green	Red	Light Blue
ZToLL50-	Green	Green	Green	Red	Yellow
ZToNuNu	Green	Green	Green	Light Blue	Light Blue

Process should have been explicitly split in subprocesses
BUT due to the "massive cleaning" @ IPHC, gridpacks have
been generated and the former recipe has been used.

Should be regenerated

Process should have been explicitly split in subprocesses
BUT no related gridpack found @ IIHE

What is the status?

Production recipe = exclusive mode + "no masses"

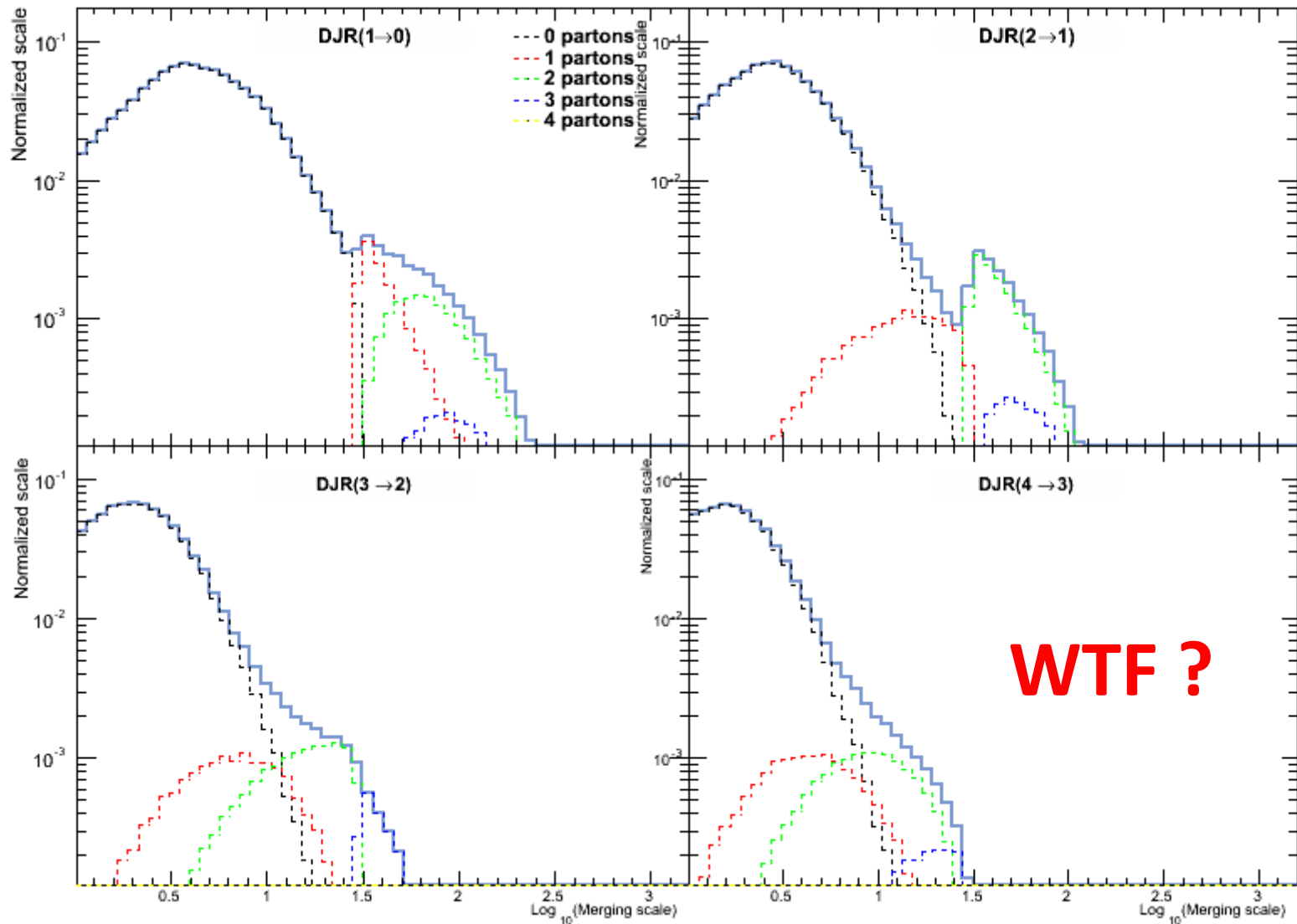
	0 jet	1 jet	2 jet	3 jet Subprocess splitting	4 jet Subprocess splitting
ZToLL10-50					
ZToLL50-					
ZToNuNu					

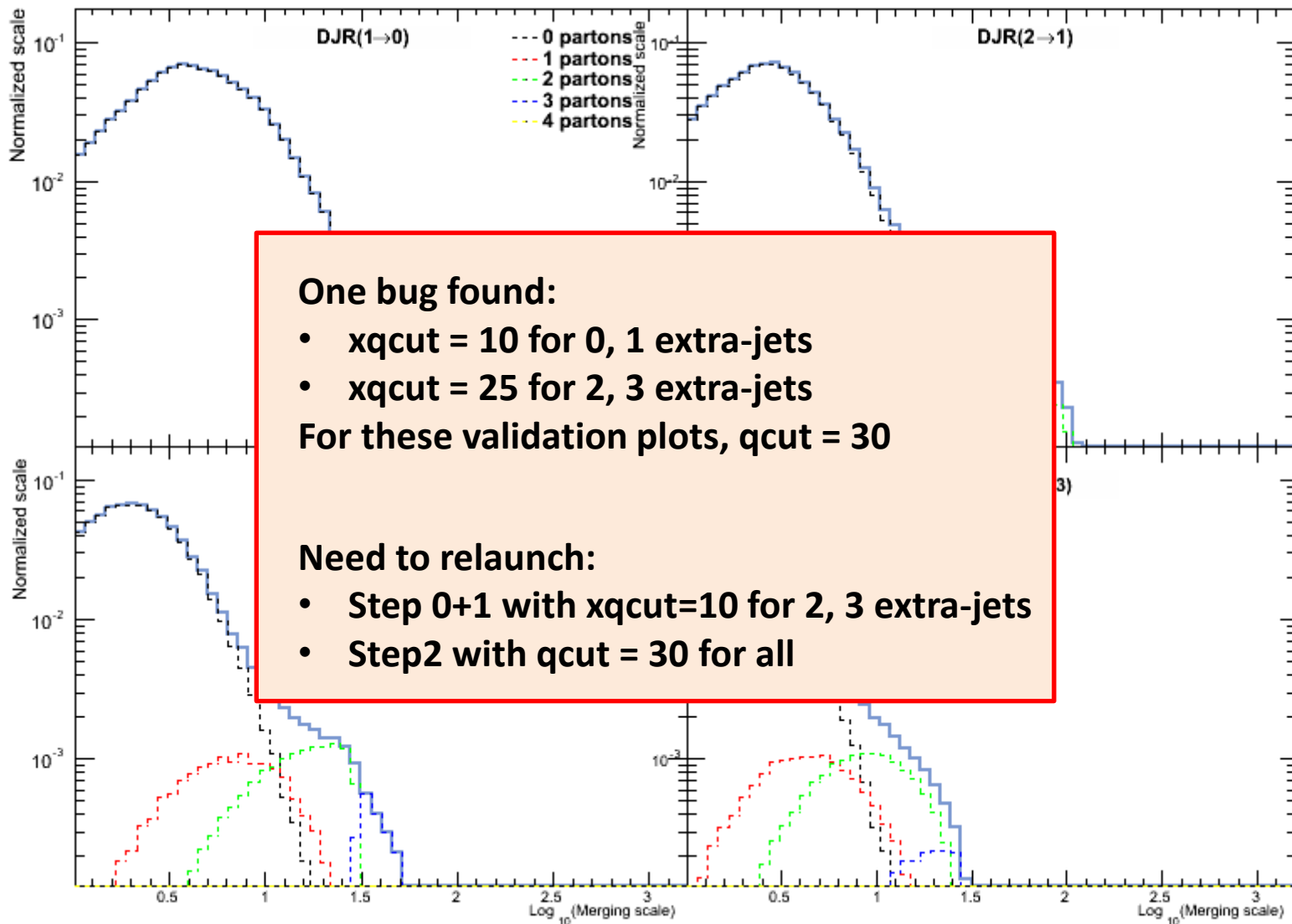
"Subprocess splitting" has been only tested on ZToLL50-
Production of one LHE file lasts 4 days with 1 CPU (possible issue with Grid queue lifetime)
BUT number of expected events $\neq$ number of generated events
We can live this issue or try something else [another test is ongoing]

PS/ME merging validation plots

ME/PS merging validation plots ZToLL10-50

0, 1, 2, 3 extra-jets

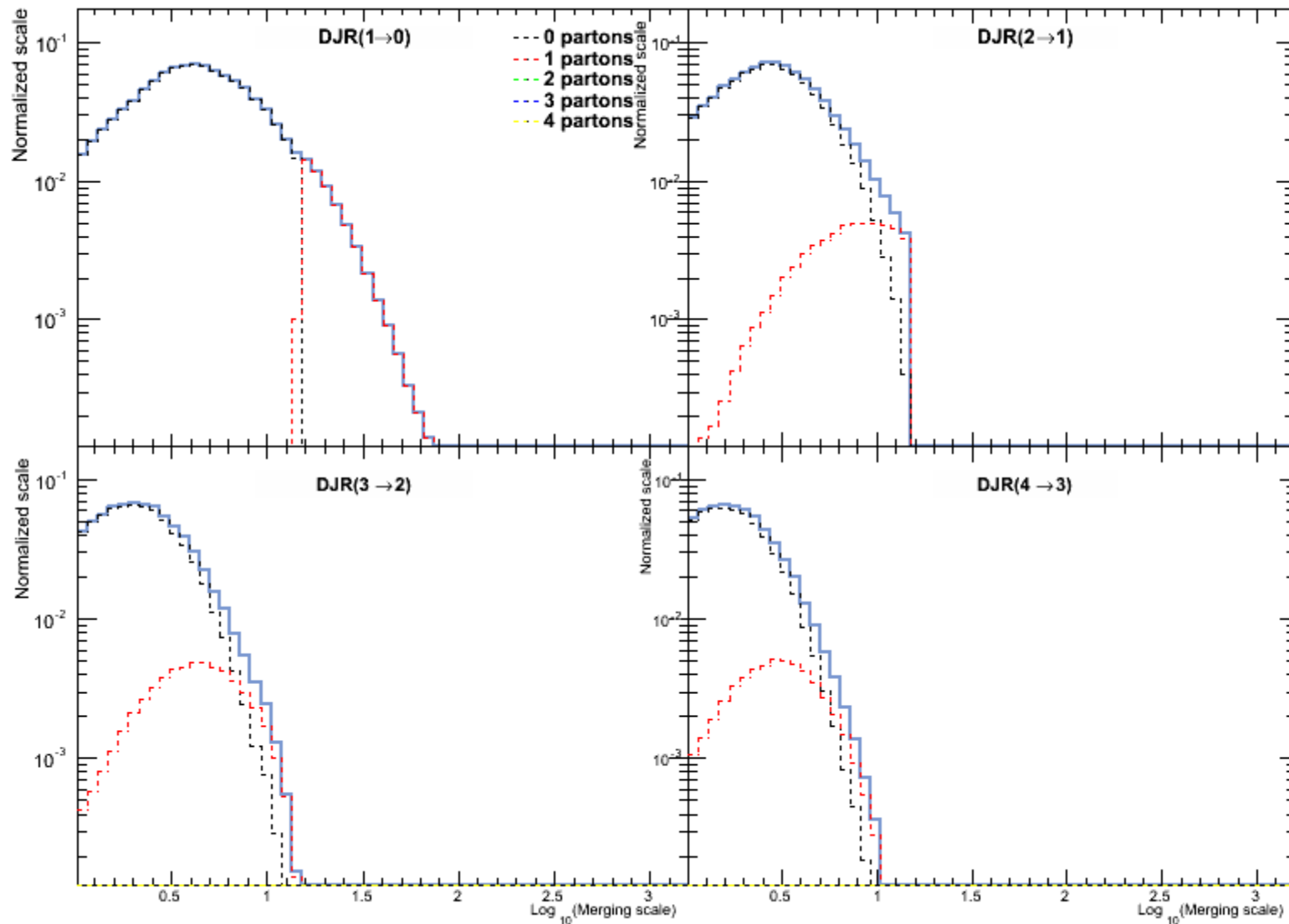




ME/PS merging validation plots ZToLL10-50

Good Plots

0, 1 extra-jets

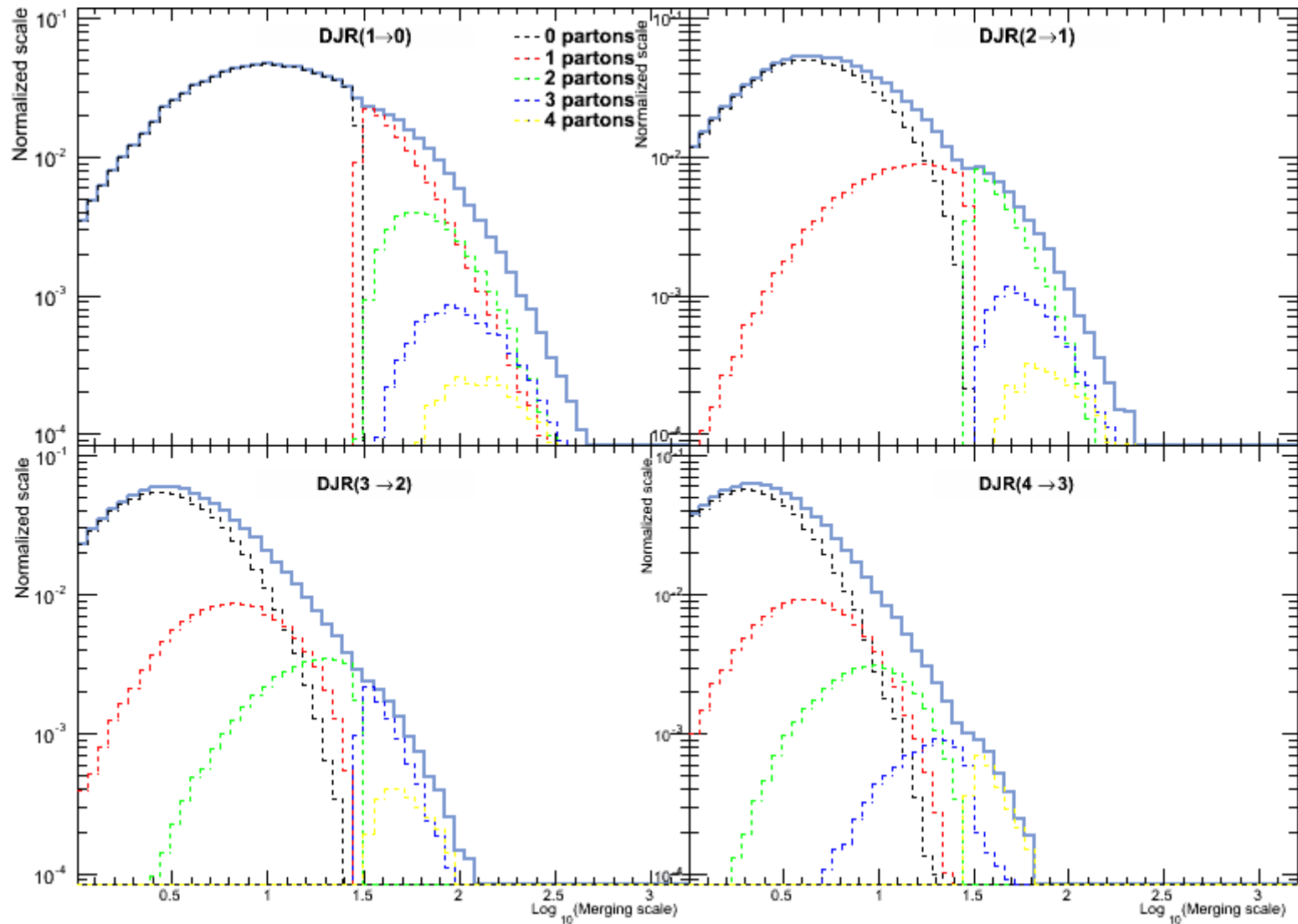


$x_{\text{qcut}} = 10, q_{\text{cut}} = 15$

To complete with the 2,3,4-jet contribution

ME/PS merging validation plots ZToLL50-

0, 1, 2, 3, 4 extra-jets

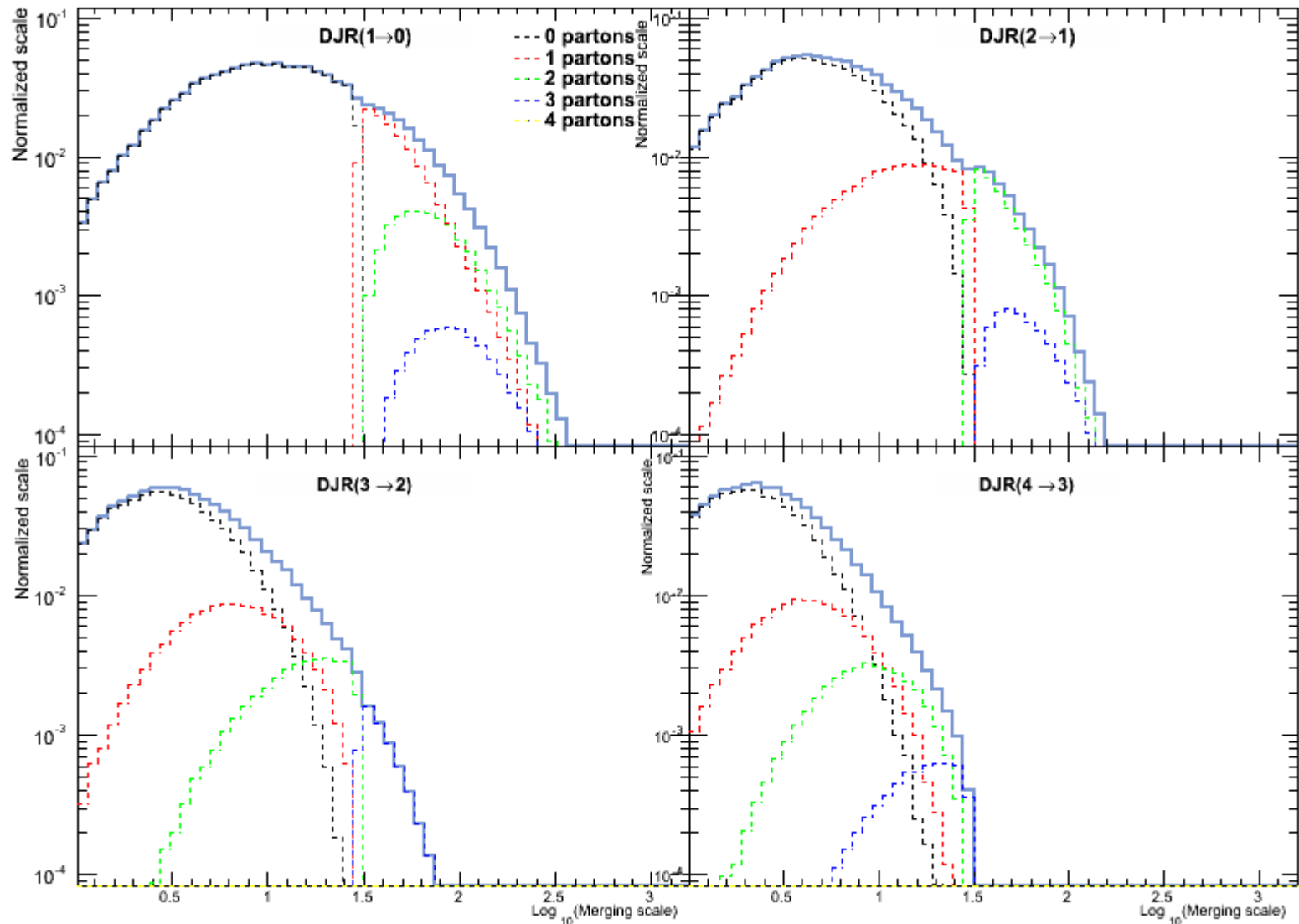


xqcut = 25, qcut = 30

If the 4-jet contribution is done again, to update

ME/PS merging validation plots ZToNuNu

0, 1, 2, 3 extra-jets



xqcut = 25, qcut = 30

To complete with the 4-jet contribution

cross sections

Cross section computation

29	ZToLL50			
30				
31	matching configuration			
32	xqcut	25		
33	qcut	30		
34				
35		MG LO xsection [pb] NOT USED	NLO xsection[pb] USED	
36		4932,17	5918,605563	
37				
38		MG5 LO xsection [pb]	xsection ratio	Matching efficiency
39	0 jet	4,93E+03	69,5%	87,3%
40	1 jet	1,31E+03	18,5%	55,4%
41	2 jet	5,26E+02	7,4%	38,8%
42	3 jet	2,03E+02	2,9%	26,0%
43	4 jet	120,68538	1,7%	24,6%

Cross section computation

47	ZToNuNu			
48				
49	matching configuration			
50	xqcut	25		
51	qcut	30		
52				
53		MG LO xsection [pb] NOT USED	NLO xsection[pb] USED	
54		9322,30	11186,76	
55				
56		MG5 LO xsection [pb]	xsection ratio	Matching efficiency
57	0 jet	9,32E+03	131,4%	87,1%
58	1 jet	2,49E+03	35,1%	54,9%
59	2 jet	9,98E+02	14,1%	38,9%
60	3 jet	3,83E+02	5,4%	26,6%
61	4 jet		0,0%	
62				

Cross section to use in the analysis

ZToLL50-

relative cross section to use in the analysis [pb]
4 792
808
227
59
33

ZToNuNu

relative cross section to use in the analysis [pb]
4 817
811
230
60
0

Computing resources