



Implications of punchthrough for SUSY searches

Ulla Gebbert
University of Hamburg

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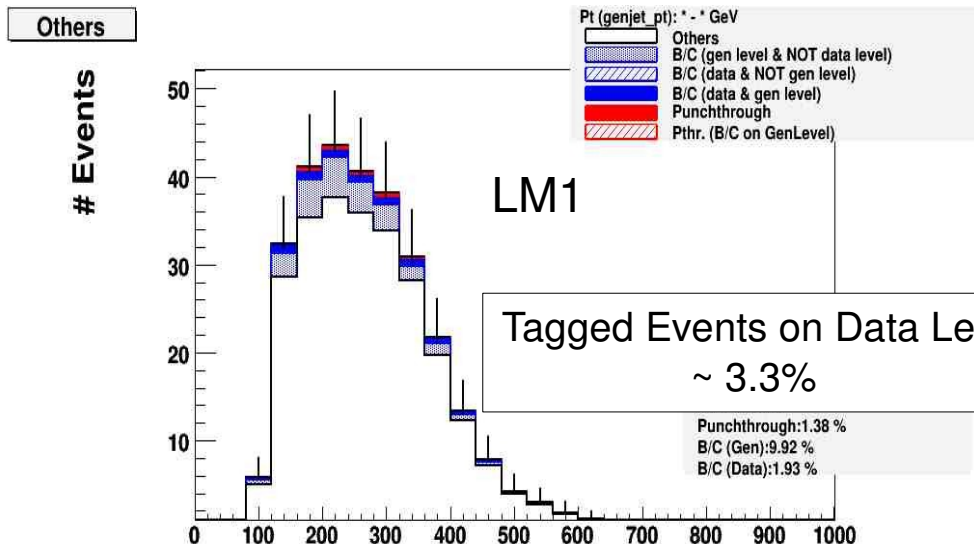
- Preselection as defined in SUSY RA2 Wiki, $MET > 150$ GeV
- Met corrected not only for jets but for muons as well
(#Events $MET_{\mu, \text{Corr}} > 200$)
- Hamburg: results vom wiki, $MET > 200$

Signal:

100 pb-1	SUSY LM1	SUSY LM4	SUSY LM6	SUSY LM8	SUSY LM9
Ulla (>200)	288(208)	145(122)	37(22)	118(81)	139(52)
Hamburg	254	---	---	---	---

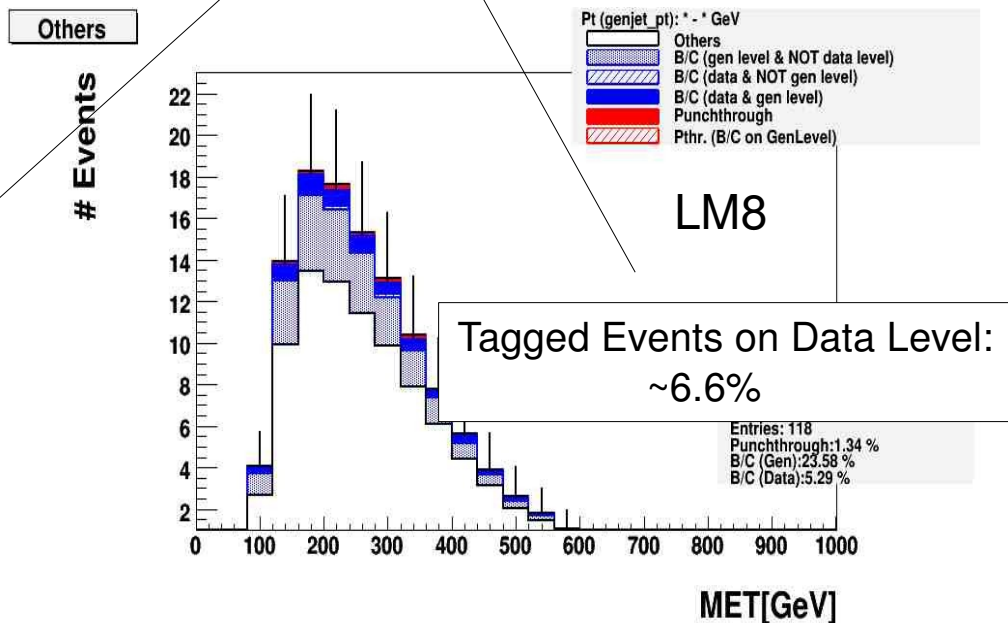
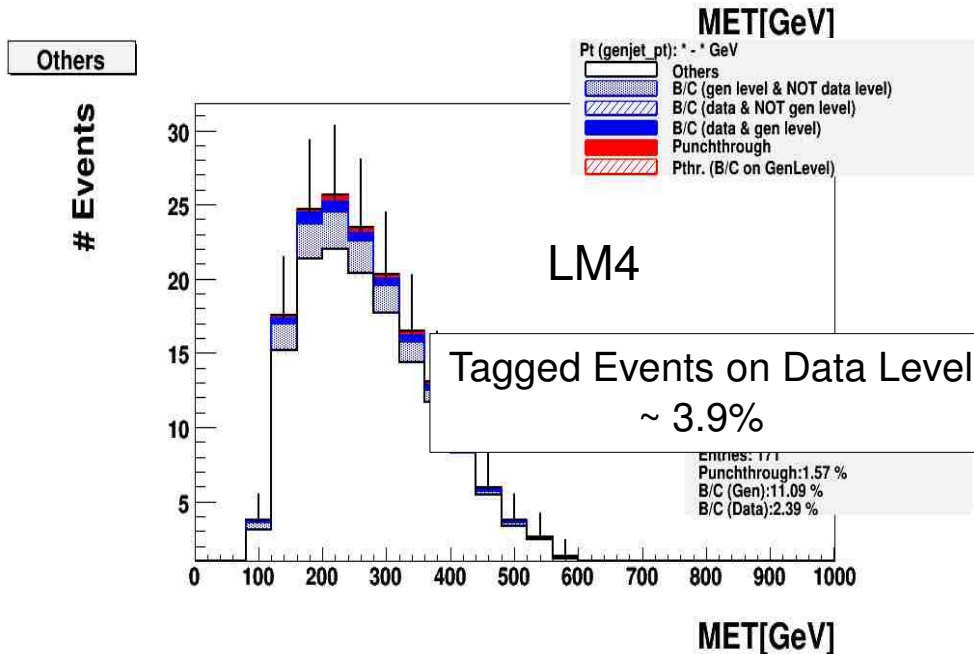
Background:

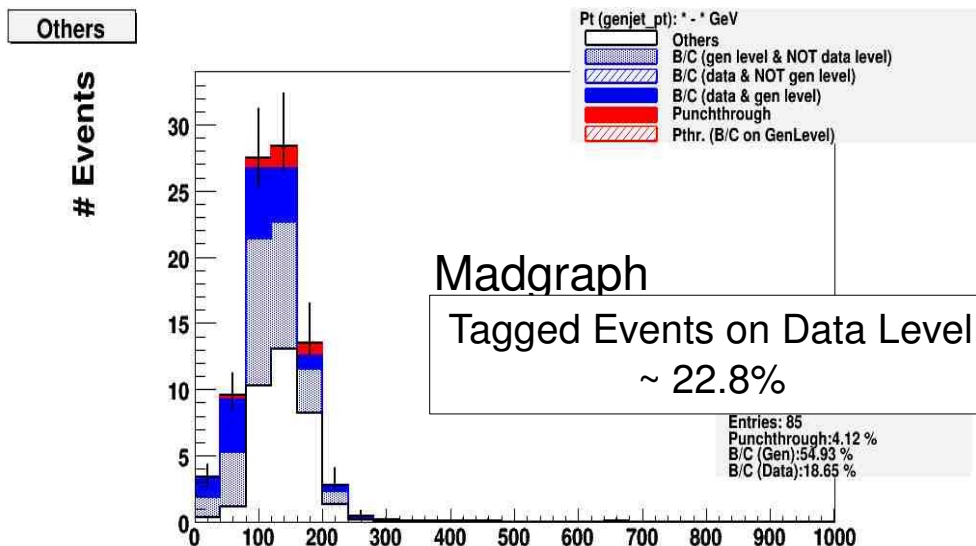
100 pb-1	QCD(Herwig)	QCD(Pythia)	QCD (Madgraph)	Z invisible	W jets	Ttbar
Ulla (>200)	199 (18)	134(4)	85(3)	8(21)	27(8)	34(5)
Hamburg	36	12	9	12	14	15



- RA2 preselection cuts applied
- In plots: Additional correction of Met with muon corrections

Event Cleaning reduces SUSY Signal for RA2
~ 3-6 %

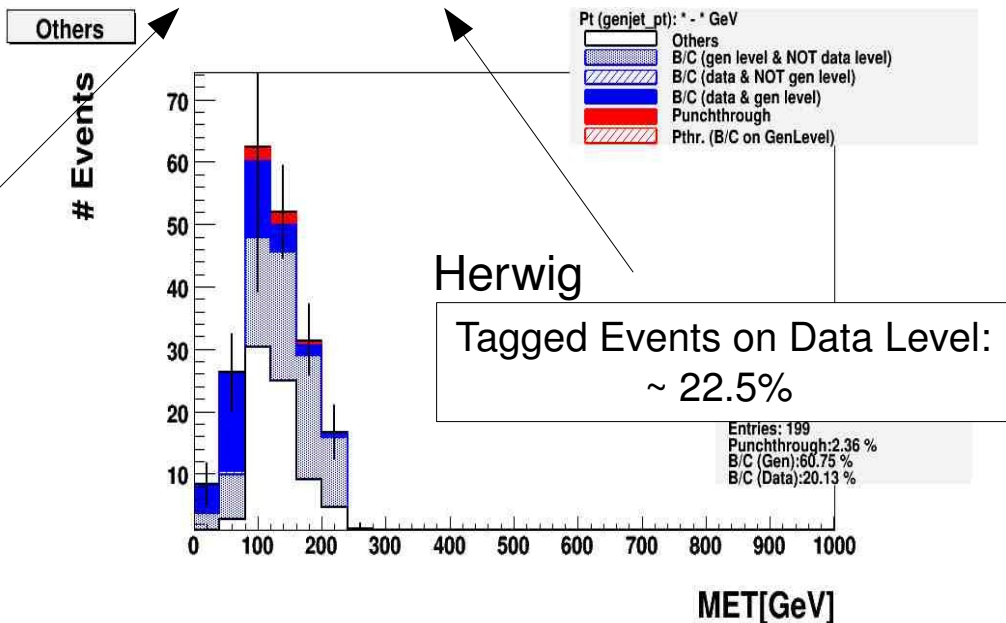
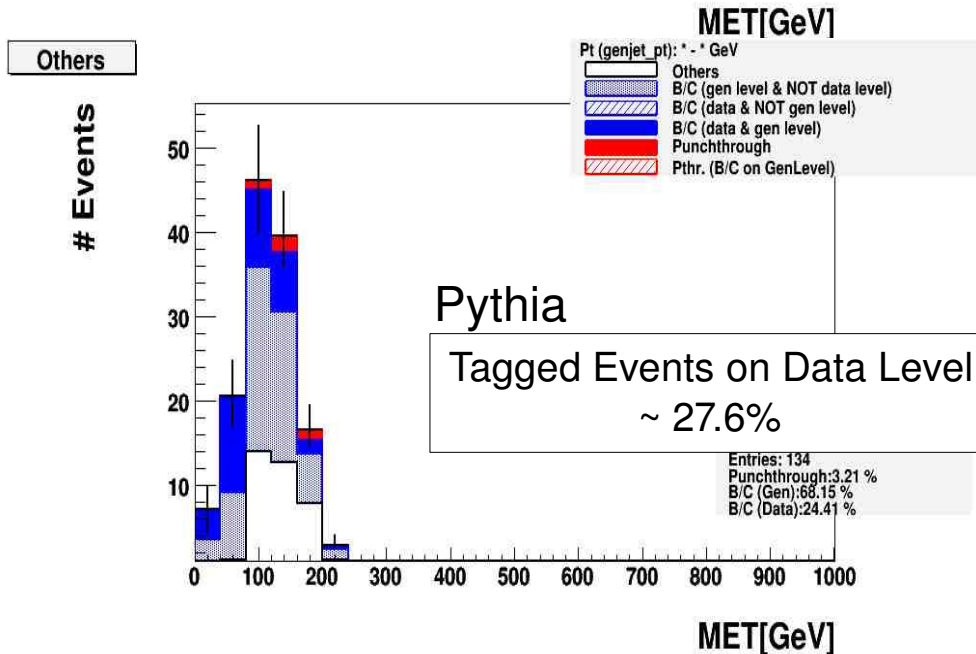




- RA2 preselection cuts applied
- In plots: Additional correction of Met with muon corrections

Event Cleaning reduces QCD Background for RA2
~ 22-28 %

Event Cleaning reduces SUSY Signal for RA2
~ 3-6%





Summary I



100 pb-1/Signal	SUSY LM1	SUSY LM4	SUSY LM6	SUSY LM8	SUSY LM9	
Events	288	171	37	118	139	
Punchthrough	1.38%	1.57%	2.04%	1.34%	0.84%	
B/C (Gen)	9.92%	11.09%	10.16%	23.58%	29.95%	
B/C (Data)	1.93%	2.39%	2.94%	5.29%	5.98%	
100 pb-1/Background	QCD(Herwig)	QCD(Pythia)	QCD (Mad)	Wjets	Zinv.	Ttbar
Events	199	134	85	27	21	34
Punchthrough	2.36%	3.21%	4.12%	0,0%	0.54%	0.46%
B/C (Gen)	60.75%	68.15%	54.93%	7.35%	2.83%	30.87%
B/C (Data)	20.13%	24.41%	18.65%	2.94%	0,0%	7.49%
S/ $\sqrt{B}$ (RA2, QCD Pythia)	19,6				9,46	
S/ $\sqrt{B}$ (RA2+Clean _{Punchthr.,B/C})	21,5				10,01	