$\tilde{q}\tilde{q}$ direct (450, 400): (ATLAS_CONF_2013_047)

- Process: $pp \to \tilde{q}\tilde{q} \to (q\chi_1^0)(q\chi_1^0)$.
- Mass: $m_{\tilde{q}} = 450$ GeV, $m_{\tilde{\chi}_1^0} = 400$ GeV.
- The number of events: $2 \cdot 10^4$.
- Event Generator: `MadGraph 5 and Pythia 6`. The MLM merging is used with the shower-kT scheme implemented in MadGraph 5 and Pythia 6, where we take xqcut = qcut = $M_{\rm SUSY}/4$ with MSUSY being the mass of the heavier SUSY particles in the production.

#	cut name	$\epsilon_{\rm Exp}$	$\epsilon_{\rm Atom}$	$\frac{\rm Atom}{\rm Exp}$	$\frac{\rm (Exp-Atom)}{\rm Error}$	#/?	$R_{\rm Exp}$	$R_{\rm Atom}$	$\frac{\rm Atom}{\rm Exp}$	$\frac{\rm (Exp-Atom)}{\rm Error}$
0	No cut	100.0	100.0							
1	base: 0 lepton	89.88 ± 0.67	98.45 ± 0.13	1.1	12.55	0	0.9 ± 0.01	0.98 ± 0.0	1.1	12.55
2	base: MET > 160	14.96 ± 0.27	10.39 ± 0.32	0.69	−10.8	1	0.17 ± 0.0	0.11 ± 0.0	0.63	−13.61
3	base: $p_T(j_1) > 130$	12.93 ± 0.25	8.49 ± 0.3	0.66	−11.41	2	0.86 ± 0.02	0.82 ± 0.03	0.95	−1.43
4	base: $p_T(j_2) > 60$	9.03 ± 0.21	5.8 ± 0.25	0.64	−9.92	3	0.7 ± 0.02	0.68 ± 0.03	0.98	−0.46
5	A base: $\Delta\phi(j_i, \text{MET}) > 0.4$	7.04 ± 0.19	4.48 ± 0.22	0.64	−8.85	4	0.78 ± 0.02	0.77 ± 0.04	0.99	−0.13
6	AM: $\text{MET}/\sqrt{H_T} > 15$	2.65 ± 0.12	1.49 ± 0.13	0.56	−6.72	5	0.38 ± 0.02	0.33 ± 0.03	0.88	−1.34
7	AM: $_{\text{meff}}(\text{inc}) > 1600$	0.13 ± 0.03	0.07 ± 0.03	0.51	−1.74	6	0.05 ± 0.01	0.05 ± 0.02	0.9	−0.24

Table 1: The cut-flow table for $\tilde{q}\tilde{q}$ direct (450, 400).