$\tilde{q}\tilde{q}$ direct (1425, 400): (ATLAS_CONF_2013_047)

- Process: $pp \to \tilde{q}\tilde{g} \to (q\chi_1^0)(qq\chi_1^0)$.
- Mass: $m_{\tilde{q}} = m_{\tilde{g}} = 1425$ GeV, $m_{\tilde{\chi}_1^0} = 525$ GeV.
- The number of events: $5 \cdot 10^3$.
- Event Generator: `MadGraph 5 and Pythia 6`. The MLM merging is used with the shower-k_T 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	98.0 ± 1.4	99.84 ± 0.06	1.02	1.31	0	0.98 ± 0.01	1.0 ± 0.0	1.02	1.31
2	base: MET > 160	93.3 ± 1.37	94.74 ± 0.32	1.02	1.03	1	0.95 ± 0.01	0.95 ± 0.0	1.0	−0.22
3	base: $p_T(j_1) > 130$	93.3 ± 1.37	94.68 ± 0.32	1.01	0.98	2	1.0 ± 0.01	1.0 ± 0.0	1.0	−0.04
4	base: $p_T(j_2) > 60$	92.4 ± 1.36	94.42 ± 0.32	1.02	1.45	3	0.99 ± 0.01	1.0 ± 0.0	1.01	0.46
5	pTj3 ¿ 60	68.5 ± 1.17	87.2 ± 0.47	1.27	14.82	4	0.74 ± 0.01	0.92 ± 0.01	1.25	13.38
6	B base: $\Delta\phi(j_i, \text{MET}) > 0.4$	60.4 ± 1.1	74.8 ± 0.61	1.24	11.44	5	0.88 ± 0.02	0.86 ± 0.01	0.97	−1.37
7	BT: $\text{MET}/m_{\rm eff}(3j) > 0.4$	44.8 ± 0.95	28.58 ± 0.64	0.64	−14.2	6	0.74 ± 0.02	0.38 ± 0.01	0.52	−20.15
8	BT: $m_{\rm eff}(\text{inc}) > 1800$	27.5 ± 0.74	7.26 ± 0.37	0.26	−24.46	7	0.61 ± 0.02	0.25 ± 0.01	0.41	−17.18

Table 1: The cut-flow table for $\tilde{q}\tilde{g}$ direct (1425, 525).