$\tilde{q}\tilde{q}$ direct (1612, 37): (ATLAS_CONF_2013_047)

- Process: $pp \to \tilde{q}\tilde{g} \to (q\chi_1^0)(qq\chi_1^0)$.
- Mass: $m_{\tilde{q}} = m_{\tilde{g}} = 1612$ GeV, $m_{\tilde{\chi}_1^0} = 37$ 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	98.8 ± 1.41	99.96 ± 0.03	1.01	0.83	0	0.99 ± 0.01	1.0 ± 0.0	1.01	0.83
2	base: MET > 160	95.9 ± 1.38	97.02 ± 0.24	1.01	0.8	1	0.97 ± 0.01	0.97 ± 0.0	1.0	−0.0
3	base: $p_T(j_1) > 130$	95.8 ± 1.38	97.02 ± 0.24	1.01	0.87	2	1.0 ± 0.01	1.0 ± 0.0	1.0	0.07
4	base: $p_T(j_2) > 60$	95.2 ± 1.38	96.96 ± 0.24	1.02	1.26	3	0.99 ± 0.01	1.0 ± 0.0	1.01	0.39
5	pTj3 ¿ 60	75.7 ± 1.23	93.02 ± 0.36	1.23	13.51	4	0.8 ± 0.01	0.96 ± 0.0	1.21	12.21
6	B base: $\Delta\phi(j_i, \text{MET}) > 0.4$	66.2 ± 1.15	77.58 ± 0.59	1.17	8.8	5	0.87 ± 0.02	0.83 ± 0.01	0.95	−2.46
7	BM: $\text{MET}/m_{\rm eff}(3j) > 0.3$	31.8 ± 0.8	50.7 ± 0.71	1.59	17.73	6	0.48 ± 0.01	0.65 ± 0.01	1.36	11.46
8	BM: $m_{\rm eff}(\text{inc}) > 1800$	22.8 ± 0.68	45.48 ± 0.7	1.99	23.25	7	0.72 ± 0.02	0.9 ± 0.01	1.25	7.1

Table 1: The cut-flow table for $\tilde{q}\tilde{g}$ direct (1612, 37).