

Process	$m_{T2}(v_1, v_2, \cancel{p}_T, 0, 0)$	Comments
QCD di-jet $\rightarrow$ hadrons	$= \max m_j$ by Lemmas 1, 4	
QCD multi jets $\rightarrow$ hadrons	$= \max m_j$ by Lemma 4	
$t\bar{t}$ production	$= \max m_j$ by Lemma 4	fully hadronic decays
	$\leq m_t$ by Lemmas 1, 7	any leptonic decays
Single top / $tW$	$= \max m_j$ by Lemma 4	fully leptonic decays
	$\leq m_t$ by Lemmas 2, 7	any leptonic decays
Multi jets: "fake" $\cancel{p}_T$	$= \max m_j$ by Lemma 5	single mismeasured jet <sup>a</sup>
	$= \max m_j$ by Lemma 5	two mismeasured jets <sup>a</sup>
Multi jets: "real" $\cancel{p}_T$	$= \max m_j$ by Lemma 5	single jet with leptonic $b$ decay <sup>a</sup>
	$= \max m_j$ by Lemma 6	two jets with leptonic $b$ decays <sup>a</sup>
$Z \rightarrow \nu\bar{\nu}$	$= 0$ by Lemma 3	
$Z j \rightarrow \nu\bar{\nu} j$	$= \max m_j$ by Lemma 3	one ISR jet <sup>a</sup>
$W \rightarrow \ell\nu^b$	$= \max m_\ell$ by Lemma 3	
$W j \rightarrow \ell\nu j^b$	$\leq m_W$ by Lemma 2	one ISR jet <sup>a</sup>
$WW \rightarrow \ell\nu\ell\nu^b$	$\leq m_W$ by Lemma 1	
$ZZ \rightarrow \nu\bar{\nu}\nu\bar{\nu}$	$= 0$ by Lemma 3	also $= m_j$ for one ISR jet <sup>a</sup>
$LQ \bar{L}\bar{Q} \rightarrow q\nu\bar{q}\bar{\nu}$	$\leq m_{LQ}$	} i.e. can take large values
$\tilde{q}\tilde{\bar{q}} \rightarrow q\tilde{\chi}_1^0 \bar{q}\tilde{\chi}_1^0$	$\leq m_{\tilde{q}}$	
$q_1, \bar{q}_1 \rightarrow q\gamma_1, \bar{q}\gamma_1$	$\leq m_{q_1}$	

So good for low multiplicity pair production signal discovery – dileptons?