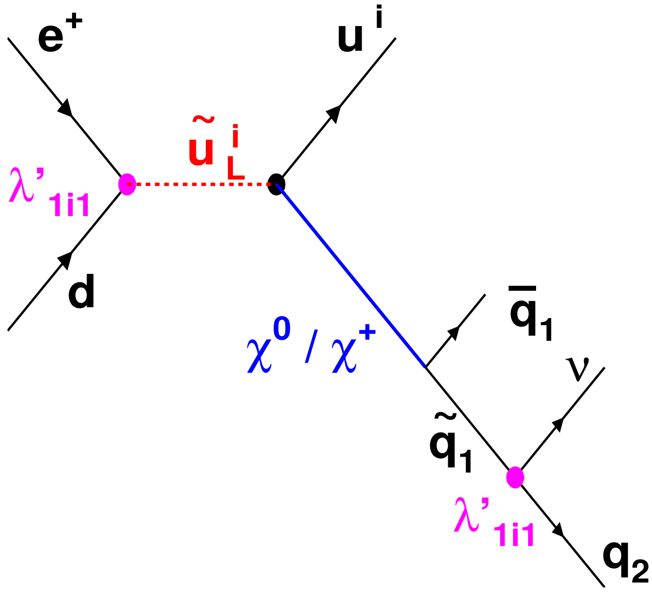
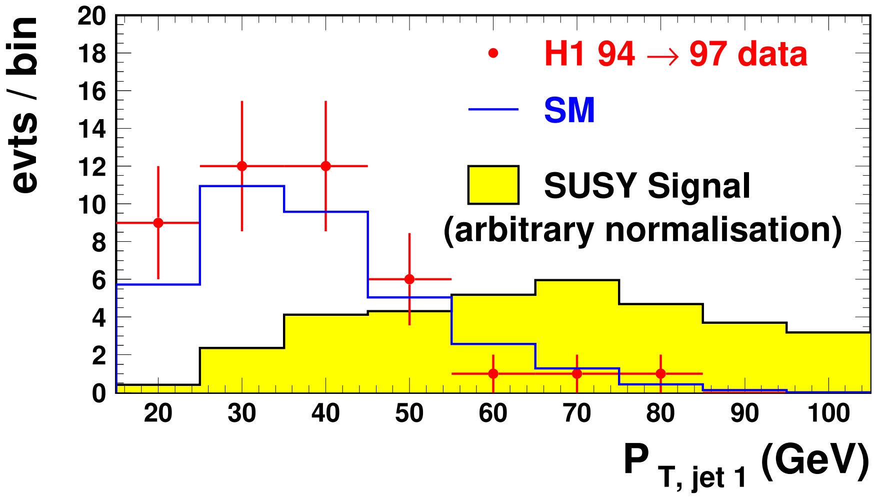
$\not{R}_p$ SUSY : Channels with several jets and $P_{T,miss}$

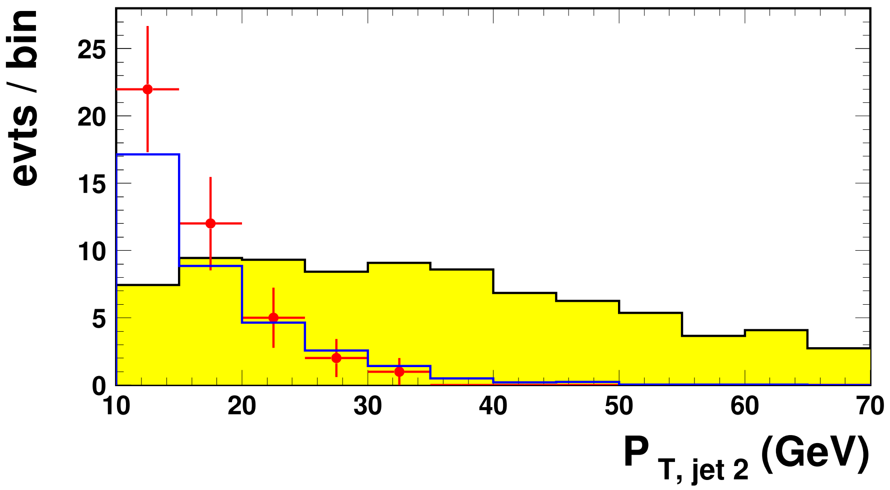


Main Preselection Cuts :

- $P_{T,miss} > 25$ GeV
- ≥ 2 jets in LAr, $P_T > 10$ GeV
- highest P_T jet : $P_T > 15$ GeV



SUSY signal shown merging several $(M_{\tilde{q}}, M_{\chi})$



Final selection :

P_T(both jets) > 15 GeV

$\Downarrow$

$N_{obs} = 20$ evts,

$N_{SM} = 18.5 \pm 2.8$ evts

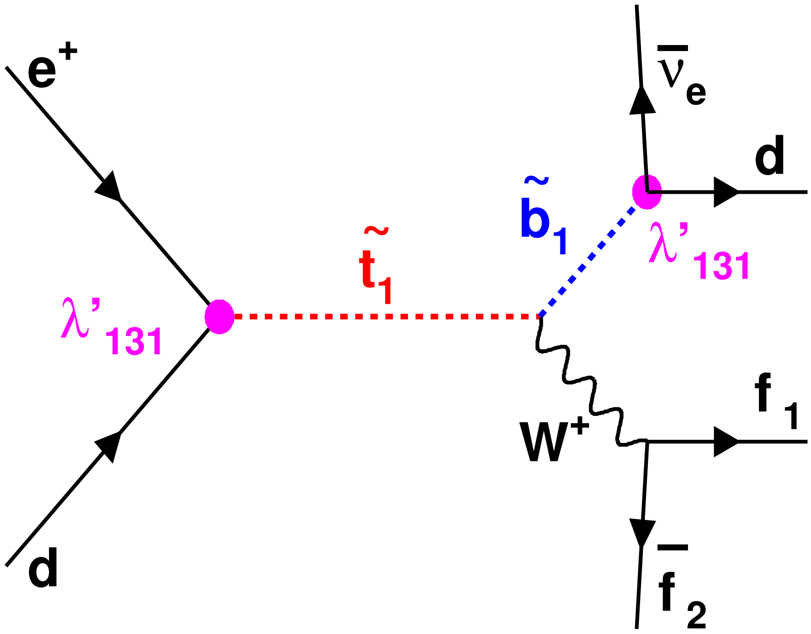
(mainly CC DIS)

(syst : $\pm 1.5\%$ on $\mathcal{L}$, $\pm 7\%$ on pdf, $\pm 2\%$ on ε_{trigg}, $\pm 4\%$ on had scale)

Efficiencies on SUSY Signal : $\varepsilon \sim 10 - 60\%$ depending on $M_{\tilde{q}}$, M_{χ}

$\Longrightarrow$ No signal observed in this channel

$\tilde{b}$ + W Production



Model : $R\!\!\!/_p$ SUSY
$\lambda'_{131} \neq 0$

Assumptions :
$\tilde{b}_1$ is the LSP
$M_{\tilde{b}_1} < M_{\tilde{t}_1} < M_{\chi_1^+}$

cf T.Kon et al

Existing limits $\Rightarrow M_{\tilde{b}_1} \gtrsim 90$ GeV, sizeable $\sigma \Rightarrow M_{\tilde{t}_1} \gtrsim 180$ GeV
Only decay mode for $\tilde{b}_1$: $\tilde{b}_1 \rightarrow d\bar{\nu}_e$

- $W \rightarrow e\nu$: 1 event in H1 (e^-)
- $W \rightarrow \mu\nu$: 4 events in H1 (2 μ^+, 1 μ^-, 1 $\mu^\pm$)

cf Events with an isolated high p_T lepton and $P_{T,miss}$
Euro. Phys. J. C5 (1998) 575.

- $W \rightarrow had.$: cf $\tilde{q} \rightarrow q\chi \rightarrow \nu q q' q''$; here : P_T(both jets) > 25 GeV

$$\boxed{N_{obs} = 3 \text{ evts}, \quad N_{SM} = 4.7 \pm 0.7 \text{ evts}}$$

For $M_{\tilde{t}_1} \sim 200$ GeV, $M_{\tilde{b}_1} \sim 100$ GeV :

$$\text{Using} \quad \left\{ \begin{array}{l} \text{efficiencies } (\varepsilon(W \rightarrow had.) \simeq \varepsilon(W \rightarrow \mu\nu) \simeq 50\%) \\ BR(W \rightarrow \mu\nu)/BR(W \rightarrow had.), \\ N_{obs}(W \rightarrow had.) \text{ and } N_{SM}(W \rightarrow had.) \end{array} \right.$$

$\Longrightarrow N_{obs}(W \rightarrow \mu) < 0.36$ at 90% C.L.