

Level-1 Efficiency for Invisible Higgs signal

Data sample : Spring 2001 invisible Higgs at 10^{34} lumi

Offline cuts applied to generator particles :

$$E_t^{\text{miss}} > 100 \text{ GeV}$$

at least 2 jets ($E_t > 40 \text{ GeV}$, $|\eta| < 5$)

Trigger Condition	Ind.	Cumul.	Rate / kHz
$E_t^{\text{miss}} > 150 \text{ GeV}$	27.2 %	27.2 %	0.005
$E_t^{\text{miss}} > 100 \text{ GeV} + \text{jet } (E_t > 80 \text{ GeV}, \eta < 3)$	24.7 %	42.3 %	0.1
$E_t^{\text{miss}} > 100 \text{ GeV} + \text{jet } (E_t > 80 \text{ GeV}, 3 < \eta < 5)$	19.4 %	52.6 %	
jet ($E_t > 250 \text{ GeV}, \eta < 3$)	2.4 %	53.9 %	0.4
jet ($E_t > 250 \text{ GeV}, 3 < \eta < 5$)	0.4 %	53.9 %	
Total		53.9 %	-

An additional 4-5 % is gained from electron triggers...

The following di-jet triggers were also considered, but did not fire :

Trigger Condition
2 jets ($E_t > 200 \text{ GeV}, \eta < 3$)
2 jets ($E_t > 200 \text{ GeV}, 3 < \eta < 5$)
jet ($E_t > 200 \text{ GeV}, 3 < \eta < 5$) + jet ($E_t > 200 \text{ GeV}, \eta < 3$)

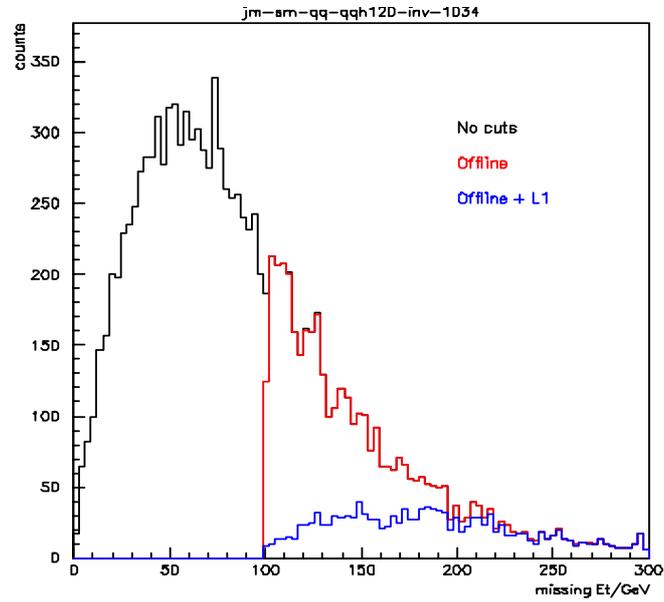
Rates are quoted from Level-1 TDR. Note that Level-1 tau-jet objects are not included in this trigger table.

Future plans (all using 2×10^{33} MC data) include :

- Repeat efficiency calculation
- Include Global Trigger $\Delta\eta$ conditions in di-jet triggers
- Rate calculations for all triggers
- Lower forward jet thresholds ???

Invisible Higgs at Level-1

E_t^{miss} spectrum



E_t spectrum of highest E_t jet

