Benchmark Mass Spectrum

M(gluino) = 649.78 GeV
M(squarkL) = 650.52 GeV
M(sbottom1) = 520.46 GeV
M(stop1) = 338.55 GeV
M(neutralino2) = 338.21 GeV
M(stau1) = 315.08 GeV
M(neutralino1) = 286.21 GeV

Total cross section = 24760 fb

\[ \alpha = 4.5 \]
\[ \tan \beta = 30. \]
\[ m_{3/2} = 14000. \text{ GeV} \]
\[ n_M = 0. \]
\[ n_H = 0.5 \]

luminosity = 400 fb\(^{-1}\)
NEW: 20 GeV / Bin

final: 40 GeV / Bin
NEW: 30 GeV / Bin
jW-end vs M(neutralino1)

20 GeV / Bin

Final: 40 GeV / Bin
16D63: mSbottom1 = 490.58 GeV

W: 1 GeV / Bin
1 previous event

16D63: \( m_{\text{Sbottom1}} = 490.58 \text{ GeV} \)

2 previous events

3 previous event

\( b+W: 40 \text{ GeV / Bin} \)

4 previous events

End = 269.1 ± 0.47 GeV
1 previous event

\[ M_{WW, \text{same-event}} \]

\[ M_{WW, \text{bi-event}} \]

\[ M_{WW, \text{subtracted}} \]

Counts / 30 GeV

End = 266.6 \pm 0.52 \text{ GeV}

16D63: mSbottom1 = 490.58 GeV

2 previous events

\[ M_{WW, \text{same-event}} \]

\[ M_{WW, \text{bi-event}} \]

\[ M_{WW, \text{subtracted}} \]

Counts / 30 GeV

End = 272.4 \pm 0.8 \text{ GeV}

3 previous event

\[ M_{WW, \text{same-event}} \]

\[ M_{WW, \text{bi-event}} \]

\[ M_{WW, \text{subtracted}} \]

Counts / 30 GeV

End = 272.8 \pm 0.82 \text{ GeV}

b+W: 30 GeV / Bin

4 previous events

\[ M_{WW, \text{same-event}} \]

\[ M_{WW, \text{bi-event}} \]

\[ M_{WW, \text{subtracted}} \]

Counts / 30 GeV

End = 268 \pm 0.65 \text{ GeV}
1 previous event

16D63: $m_{Sbottom1} = 490.58$ GeV

2 previous events

3 previous event

$b + W$: 10 GeV / Bin

4 previous events
16D40: mSbottom1 = 504.79 GeV

End = 265.9 ± 0.32 GeV

End = 261 ± 0.35 GeV

4 previous events

End = 256.3 ± 0.43 GeV
benchmark: \( m_{\text{Sbottom1}} = 520.46 \text{ GeV} \)

\[
\begin{align*}
\text{End} &= 271.7 \pm 0.43 \text{ GeV} \\
\text{End} &= 269.8 \pm 0.54 \text{ GeV}
\end{align*}
\]
16A60: $m_{\text{Sbottom}} = 530.11$ GeV

End = $267.2 \pm 0.33$ GeV

End = $260.2 \pm 0.28$ GeV

3 previous events

End = $266.3 \pm 0.36$ GeV
1 previous event

17D24: mStop1 = 314.99 GeV

2 previous events

3 previous event: Lum= 500 fb⁻¹  W: 1 GeV / Bin
1 previous event

17D24: \( m_{\text{Stop1}} = 314.99 \) GeV

2 previous events

3 previous event: \( \text{Lum}= 500 \text{ fb}^{-1} \)  \( b+W: 40 \text{ GeV} / \text{Bin} \)

End = \( 222 \pm 0.11 \) GeV

End = \( 221.4 \pm 0.088 \) GeV

End = \( 222.7 \pm 0.11 \) GeV
1 previous event  

17D24: mStop1 = 314.99 GeV  

2 previous events

3 previous event: Lum= 500 fb⁻¹  
b+W: 30 GeV / Bin

End = 211.1 ± 0.55 GeV

End = 227.1 ± 0.14 GeV
1 previous event  

**17D24: mStop1 = 314.99 GeV**  

2 previous events

3 previous event: \( \text{Lum} = 500 \ \text{fb}^{-1} \)  

\( b+W: 20 \ \text{GeV} / \text{Bin} \)

---

**End = 211.4 \pm 0.11 \text{ GeV}**

**End = 213.5 \pm 0.2 \text{ GeV}**

**End = 229.8 \pm 0.19 \text{ GeV}**
1 previous event  

17D24: $m_{\text{Stop1}} = 314.99$ GeV  

2 previous events

3 previous event: $\text{Lum} = 500$ fb$^{-1}$  

$b+W$: 10 GeV / Bin
1 previous event

17A26: mStop1 = 362.41 GeV

2 previous events

3 previous event: Lum= 500 \text{ fb}^{-1} \quad W: 1 \text{ GeV / Bin}
1 previous event

\[ \text{17A26: } m_{\text{Stop1}} = 362.41 \text{ GeV} \]

2 previous events

\[ \text{End } = 268.6 \pm 0.49 \text{ GeV} \]

3 previous event: \( \text{Lum}= 500 \text{ fb}^{-1} \)

\[ b+W: 40 \text{ GeV / Bin} \]

\[ \text{End } = 302 \pm 0.53 \text{ GeV} \]
1 previous event  17A26: mStop1 = 362.41 GeV  2 previous events

3 previous event: Lum = 500 fb\(^{-1}\)  b+W: 30 GeV / Bin
1 previous event  

2 previous events

$17A26: \text{mStop}1 = 362.41 \text{ GeV}$

3 previous events: Lum= 500 fb$^{-1}$  

b+W: 20 GeV / Bin

End = 266.6 $\pm$ 0.32 GeV

End = 271.3 $\pm$ 0.31 GeV

End = 270.9 $\pm$ 0.24 GeV
1 previous event  

17A26: $m_{\text{Stop1}} = 362.41$ GeV 

2 previous events 

3 previous event: $\text{Lum}= 500$ fb$^{-1}$ 

$b+W$: 10 GeV / Bin