Benchmark Mass Spectrum

\[ M(\text{gluino}) = 649.78 \text{ GeV} \]
\[ \alpha = 4.5 \]
\[ M(\text{squarkL}) = 650.52 \text{ GeV} \]
\[ \tan\beta = 30. \]
\[ M(\text{sbottom1}) = 520.46 \text{ GeV} \]
\[ m_{3/2} = 14000. \text{ GeV} \]
\[ M(\text{stop1}) = 338.55 \text{ GeV} \]
\[ n_M = 0. \]
\[ M(\text{neutralino2}) = 338.21 \text{ GeV} \]
\[ n_H = 0.5 \]
\[ M(\text{stau1}) = 315.08 \text{ GeV} \]

Total cross section = 24760 fb

Luminosity = 3600000. / 24760. = 145 fb^{-1}
$m_{B\tau\tau\text{-end}}$ vs $M(s_{\text{bottom1}})$

The diagram shows the relationship between $m_{B\tau\tau\text{-end}}$ and $M(s_{\text{bottom1}})$. The graph includes a theoretical formula represented by a green line, an experiment simulation shown by red points, and a reference point marked with a purple square. The x-axis represents $m_{s_{\text{bottom1}}}$ ranging from 500 to 560, while the y-axis represents $m_{B\tau\tau\text{-end}}$ ranging from 160 to 240.
mBTauTau-end vs M(neutralino2)

mBTauTauEnd vs mNeutralino2

- Green line: Theoretical formula
- Red line: Experiment simulation
- Purple square: Reference point

Graph shows the relationship between mBTauTauEnd and mNeutralino2 with theoretical and experimental data points plotted.
mBTauTau-end vs M(neutralino1)

Graph showing the relationship between mBTauTauEnd and mNeutralino1, with theoretical formula, experiment simulation, and reference point indicated.
benchmark

Visible b-tau-tau mass
- $M_{b\tau\tau}$ for the same event
- $M_{b\tau\tau}$ for the bi-event
- $M_{b\tau\tau}$ after subtraction

scaleFactor = 0.663024
End = 210.4 ± 2.5 GeV

<table>
<thead>
<tr>
<th>hMjetBtautau</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Entries</td>
<td>-177</td>
</tr>
<tr>
<td>Mean</td>
<td>279.6</td>
</tr>
<tr>
<td>RMS</td>
<td>176.6</td>
</tr>
<tr>
<td>$\chi^2$ / ndf</td>
<td>1.605 / 1</td>
</tr>
<tr>
<td>p0</td>
<td>-1.703 ± 0.116</td>
</tr>
<tr>
<td>p1</td>
<td>210.4 ± 2.5</td>
</tr>
</tbody>
</table>

$M(sbottom1) = 520.46$    $M(neutralino2) = 338.21$

$M(neutralino1) = 286.21$