Two photon hadronic backgrounds

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### Comparison of TESLA and NLC-H for Table 7

#### TESLA, $p_t > 2.2 GeV$

<table>
<thead>
<tr>
<th></th>
<th>Events per BX $[\times 10^{-3}]$</th>
<th>multiplicity</th>
<th>charged multiplicity</th>
<th>total energy per event</th>
</tr>
</thead>
<tbody>
<tr>
<td>direct</td>
<td>5.3</td>
<td>15.18</td>
<td>8.53</td>
<td>48(0.25)</td>
</tr>
<tr>
<td>single resolved</td>
<td>4.0</td>
<td>30.52</td>
<td>15.67</td>
<td>80(0.32)</td>
</tr>
<tr>
<td>double resolved</td>
<td>11.2</td>
<td>44.66</td>
<td>22.18</td>
<td>132(1.5)</td>
</tr>
</tbody>
</table>

#### NLC-H, $p_t > 2.2 GeV$ (partons)

<table>
<thead>
<tr>
<th></th>
<th>Events per BX $[\times 10^{-3}]$</th>
<th>multiplicity</th>
<th>charged multiplicity</th>
<th>total energy per event</th>
</tr>
</thead>
<tbody>
<tr>
<td>direct</td>
<td>0.79</td>
<td>7.2</td>
<td>3.4</td>
<td>15.6(0.01)</td>
</tr>
<tr>
<td>single resolved</td>
<td>0.84</td>
<td>23.2</td>
<td>11.46</td>
<td>37.7(0.03)</td>
</tr>
<tr>
<td>double resolved</td>
<td>0.64</td>
<td>32.9</td>
<td>15.9</td>
<td>50.5(0.03)</td>
</tr>
</tbody>
</table>

#### NLC-H, all events

<table>
<thead>
<tr>
<th></th>
<th>Events per BX $[\times 10^{-3}]$</th>
<th>multiplicity</th>
<th>charged multiplicity</th>
<th>total energy per event</th>
</tr>
</thead>
<tbody>
<tr>
<td>direct</td>
<td>3.6</td>
<td>6.5</td>
<td>3.2</td>
<td>10.1(0.04)</td>
</tr>
<tr>
<td>single resolved</td>
<td>6.9</td>
<td>20.3</td>
<td>9.8</td>
<td>34.5(0.24)</td>
</tr>
<tr>
<td>double resolved</td>
<td>23.</td>
<td>30.1</td>
<td>14.6</td>
<td>48.8(1.15)</td>
</tr>
</tbody>
</table>
Neutral energy for NLC-H events

EPHCTH[0]
Nent = 3514
Mean = -0.03818
RMS = 0.8173

EPHCTH[1]
Nent = 21262
Mean = 0.008859
RMS = 0.9368

EPHCTH[2]
Nent = 107447
Mean = -0.01088
RMS = 0.9429
Charged energy for NLC-H events

ECHCTH[0]
Nent = 3432
Mean = 0.03367
RMS = 0.842

ECHCTH[1]
Nent = 20030
Mean = -0.00176
RMS = 0.9432

ECHCTH[2]
Nent = 101116
Mean = -0.01178
RMS = 0.9429
Total barrel energy for NLC-H events

$|\cos(\theta)| < .7$
Total endcap energy for NLC-H events

$0.7 < |\cos(\theta)| < 0.9$

**EENDCAP[0]**
- Nent = 1064
- Mean = 1.973
- RMS = 2.56

**EENDCAP[1]**
- Nent = 2025
- Mean = 2.794
- RMS = 2.16

**EENDCAP[2]**
- Nent = 6910
- Mean = 3.902
- RMS = 2.228
Total mask energy for NLC-H events

$|\cos(\theta)| > .9$

- **EMASK[0]**
  - Nent = 1064
  - Mean = 5.569
  - RMS = 9.393

- **EMASK[1]**
  - Nent = 2025
  - Mean = 28.76
  - RMS = 26.29

- **EMASK[2]**
  - Nent = 6910
  - Mean = 41.05
  - RMS = 27.25
$E_{cm}$ for NLC-H events, $p_t > 2.2 GeV$
N charged for NLC-H events, $p_t > 2.2 \text{GeV}$
N neutral for NLC-H events, $p_t > 2.2\text{GeV}$
$E_{cm}$ for NLC-H events

\begin{align*}
\text{ECM}[0] & : N_{\text{ent}} = 291, \quad \text{Mean} = 10.94, \quad \text{RMS} = 5.785 \\
\text{ECM}[1] & : N_{\text{ent}} = 246, \quad \text{Mean} = 28.33, \quad \text{RMS} = 21.6 \\
\text{ECM}[2] & : N_{\text{ent}} = 109, \quad \text{Mean} = 40.45, \quad \text{RMS} = 23.44
\end{align*}
N charged for NLC-H events
N neutral for NLC-H events

- NPHOTON[0]
  - Nent = 291
  - Mean = 3.814
  - RMS = 4.47

- NPHOTON[1]
  - Nent = 246
  - Mean = 11.82
  - RMS = 6.732

- NPHOTON[2]
  - Nent = 109
  - Mean = 17.06
  - RMS = 6.691