

# New MC check

Gao Zhen

2016.07.27

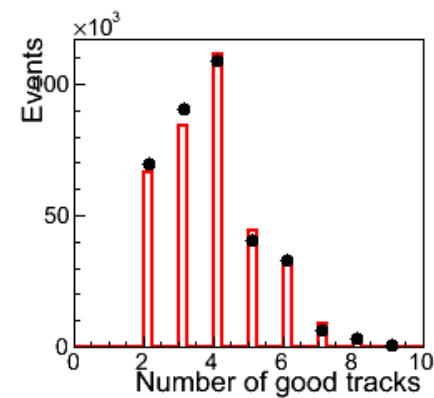
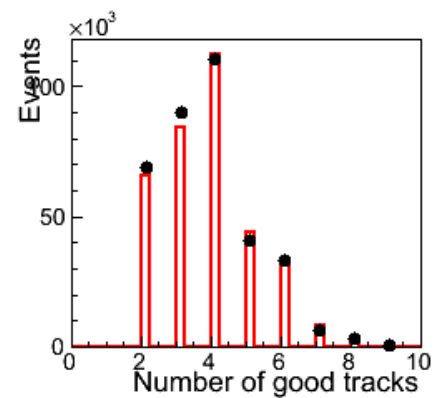
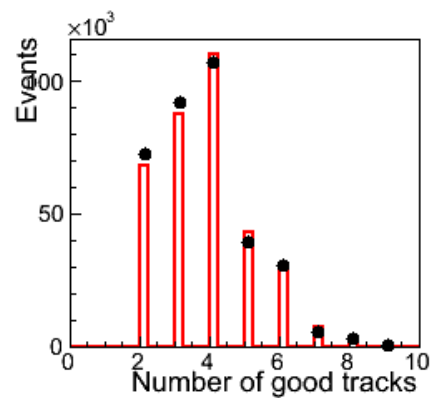
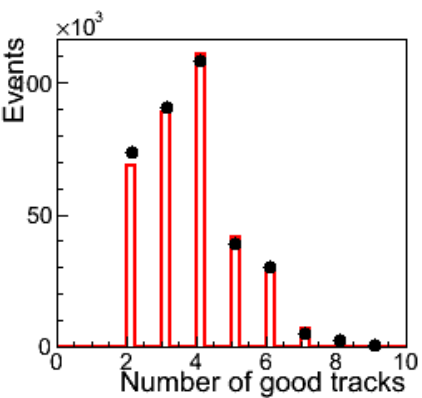
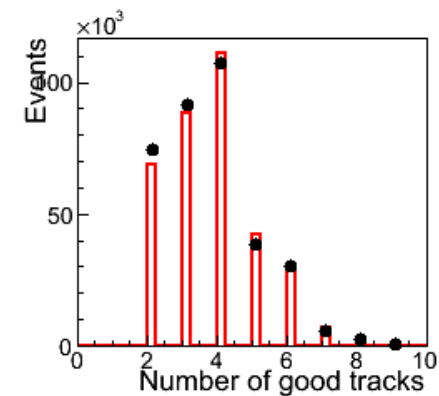
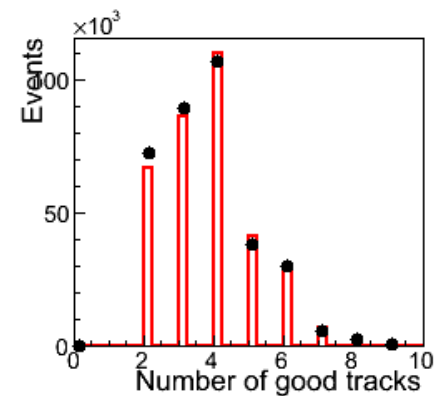
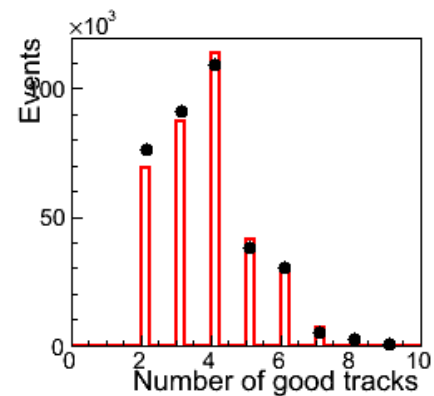
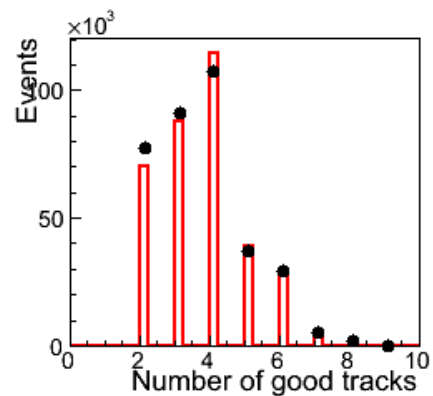
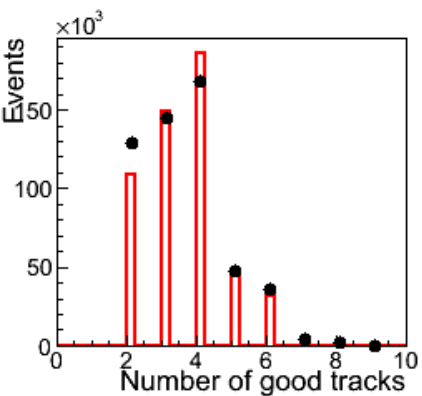
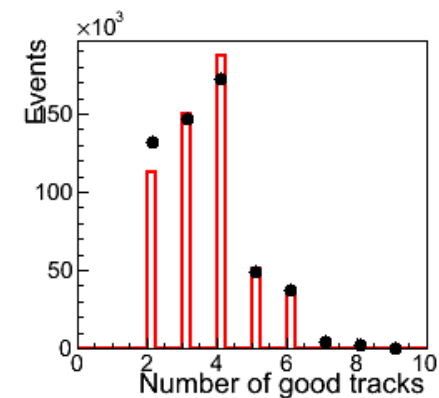
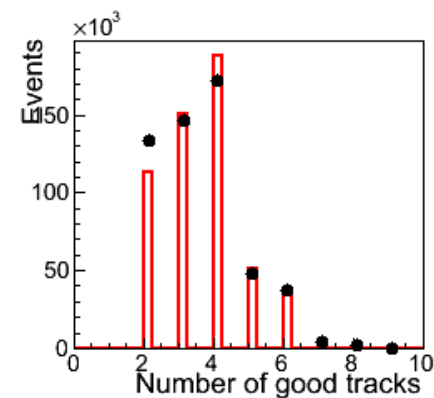
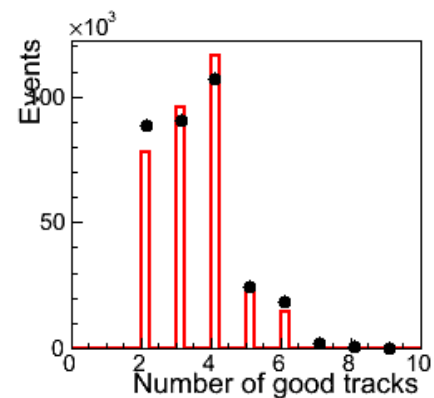
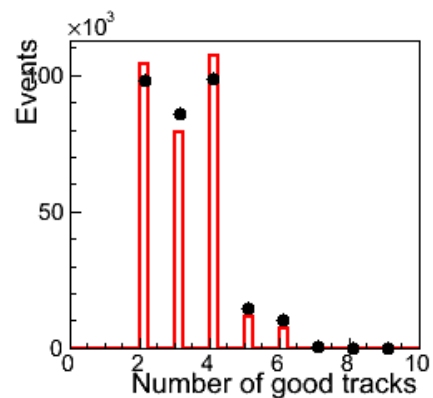
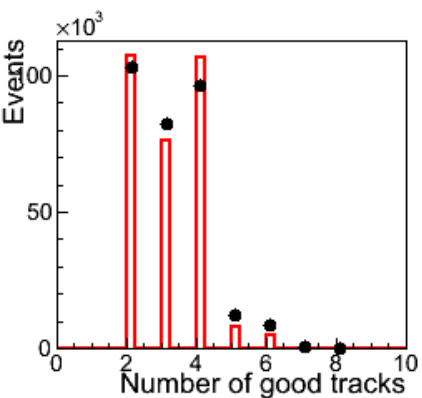
# Problem of old version BesEvtGen

## Old :

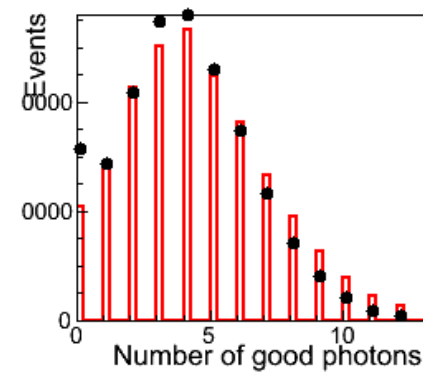
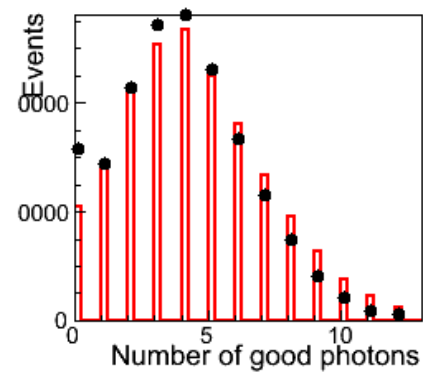
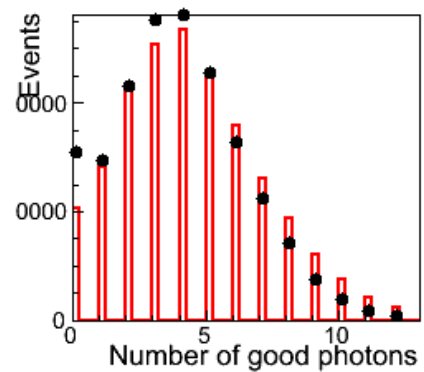
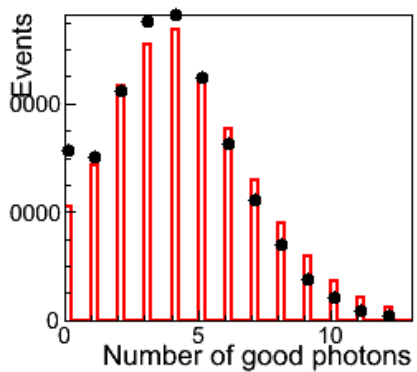
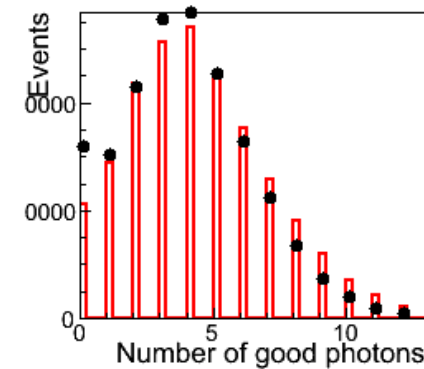
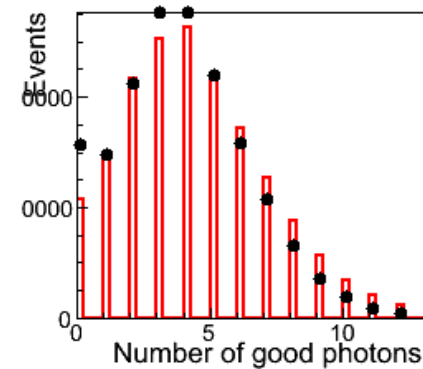
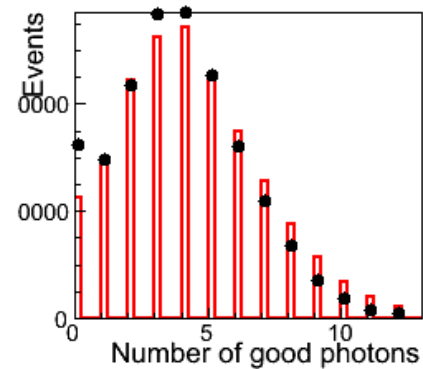
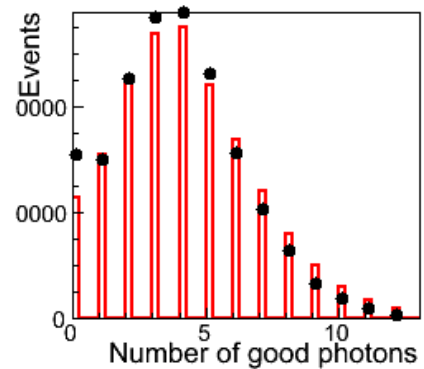
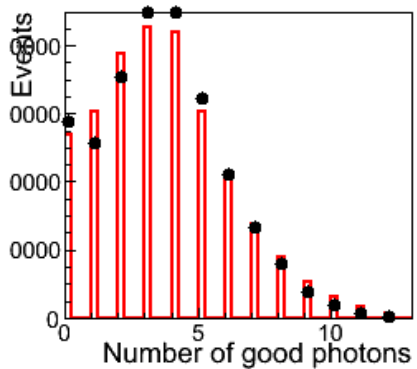
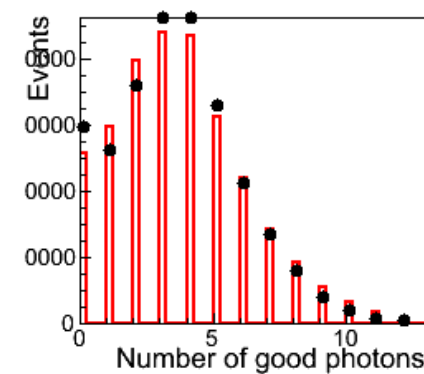
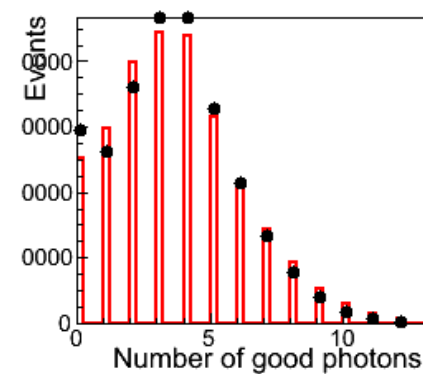
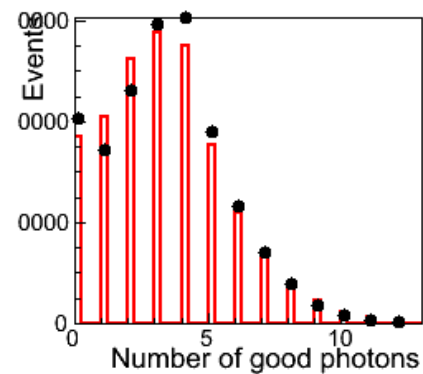
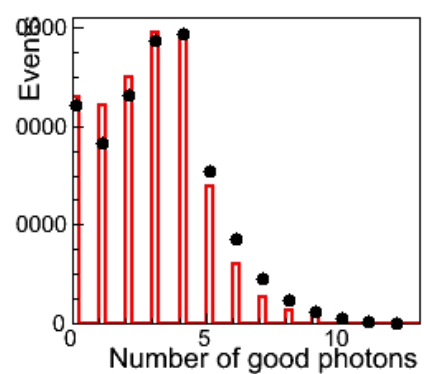
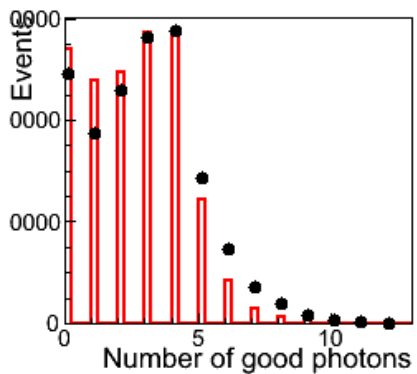
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- Decay vpho
- 34.3156 ConExc 74110;
- 3.7698 PHOKHARA\_pipi ;
- 6.42951 PHOKHARA\_pi0pi0pipi ;
- 0.00523862 PHOKHARA\_4pi ;
- 0.37067 PHOKHARA\_ppbar ;
- 0.860608 PHOKHARA\_nnbar ;
- 0.863332 PHOKHARA\_KK ;
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- 0.491744 PHOKHARA\_pipipi0 ;
- 0 PHOKHARA\_LLBB ;

## New :

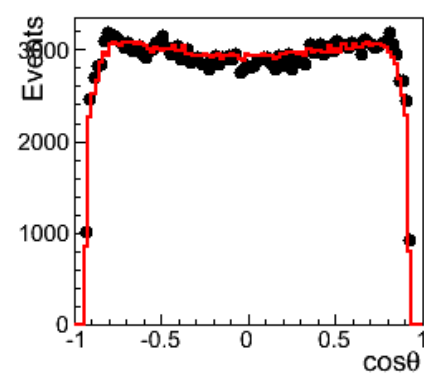
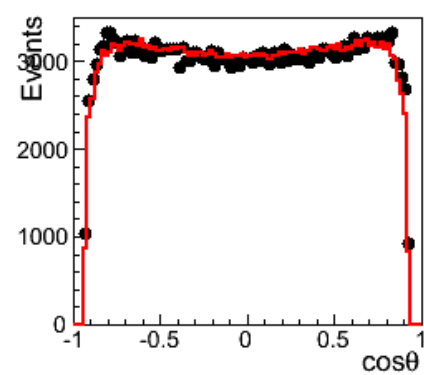
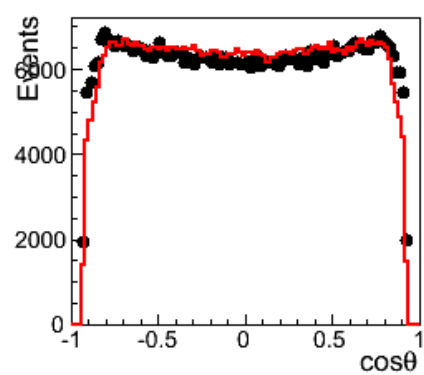
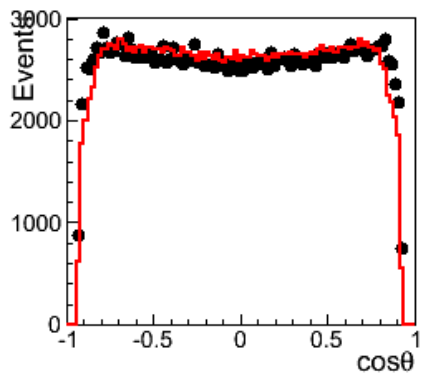
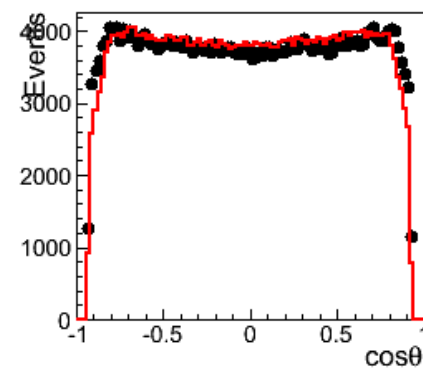
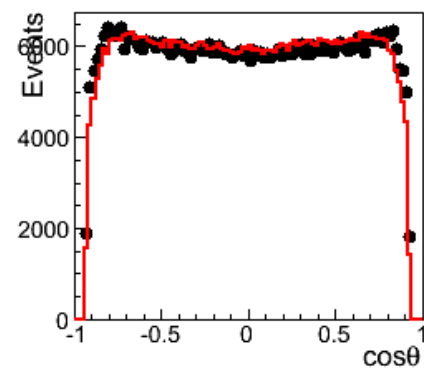
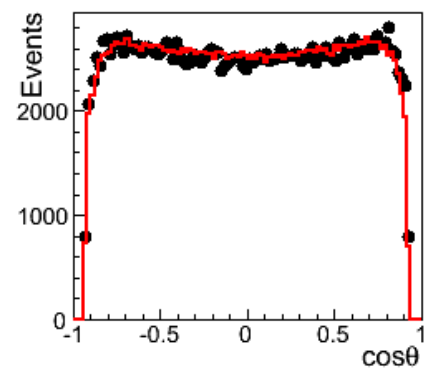
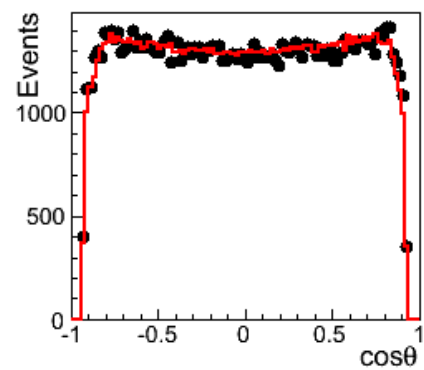
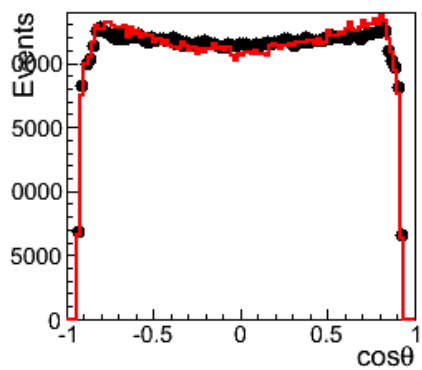
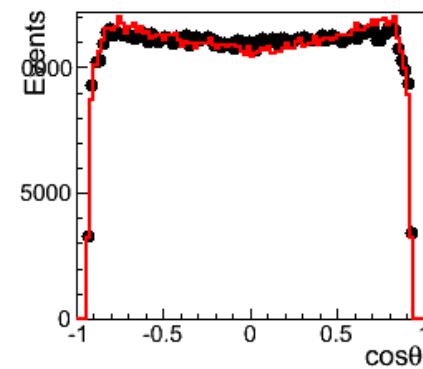
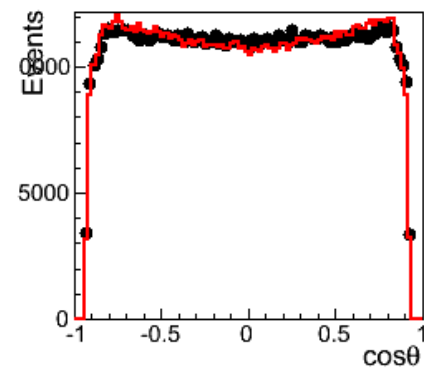
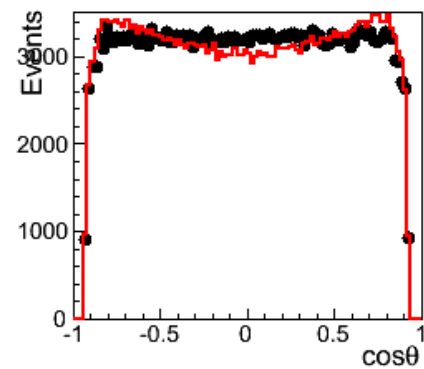
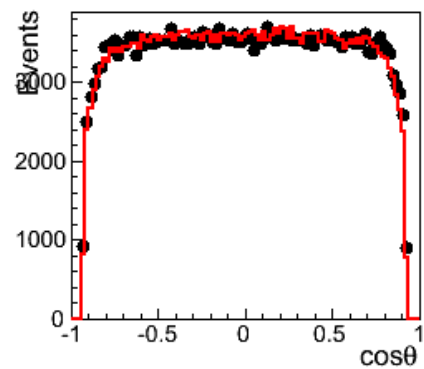
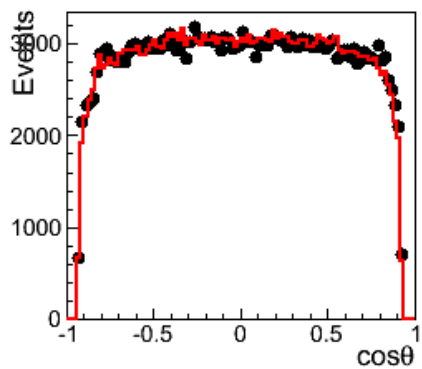
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- Decay vpho
- 29.7269 ConExc 74110;
- 3.7698 PHOKHARA\_pipi ;
- 6.42951 PHOKHARA\_pi0pi0pipi ;
- 4.59388 PHOKHARA\_4pi ;
- 0.37067 PHOKHARA\_ppbar ;
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- 0.863332 PHOKHARA\_KK ;
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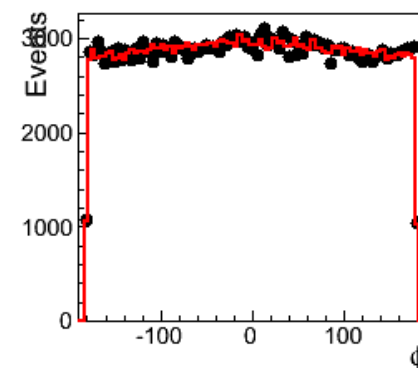
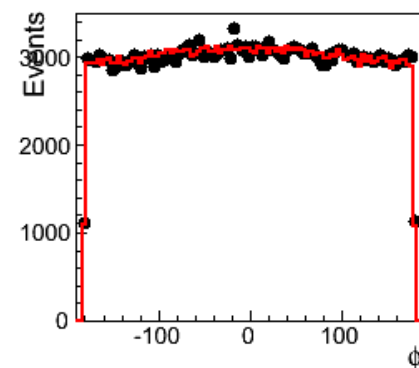
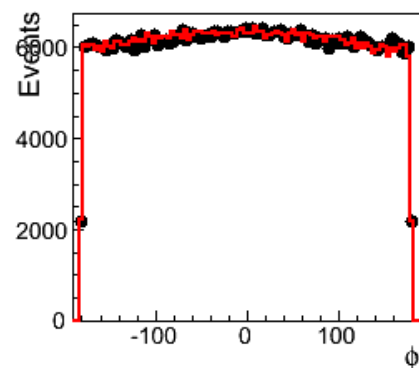
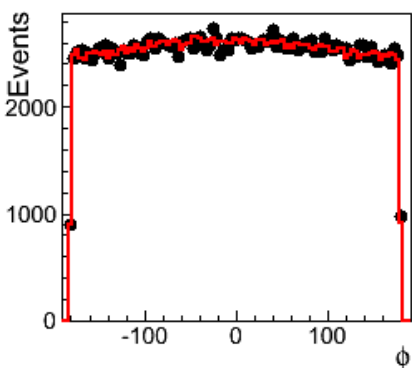
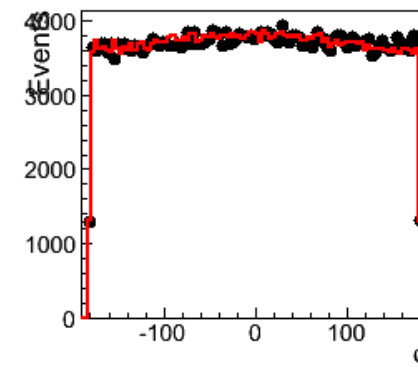
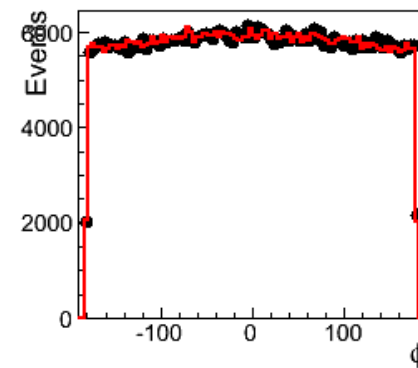
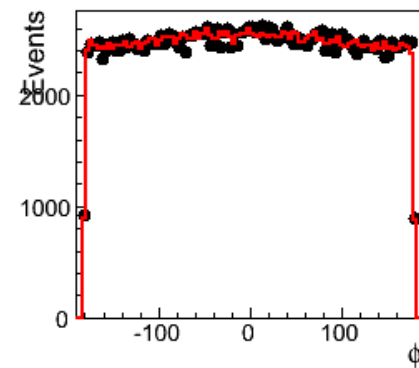
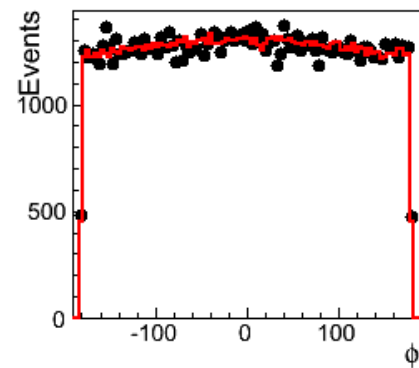
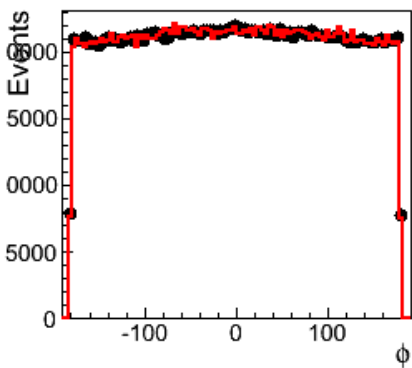
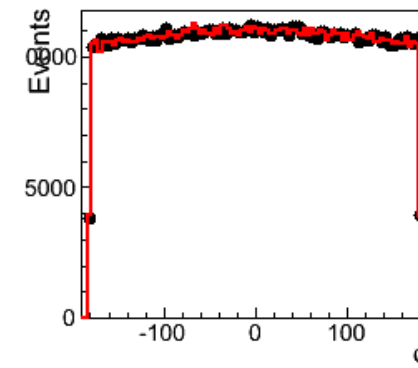
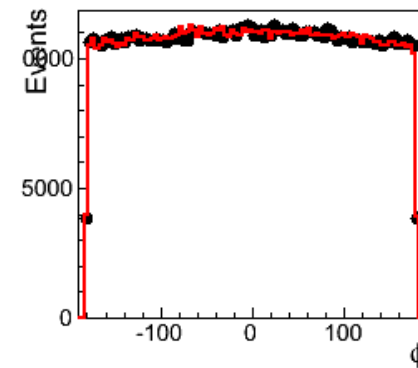
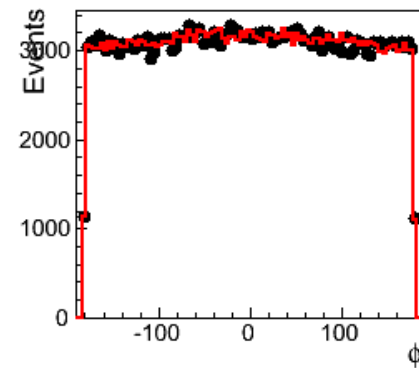
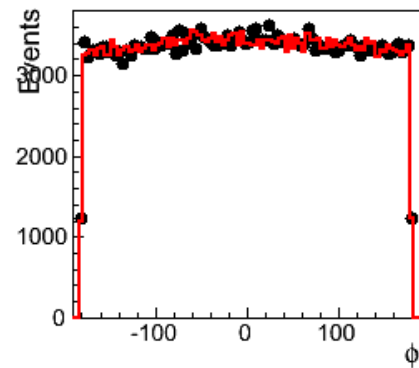
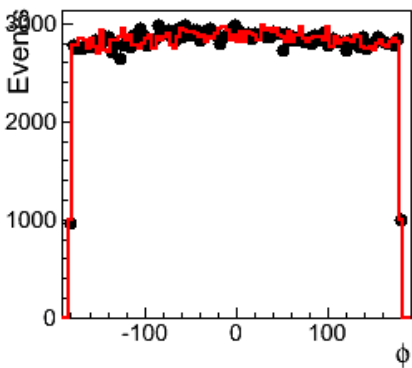
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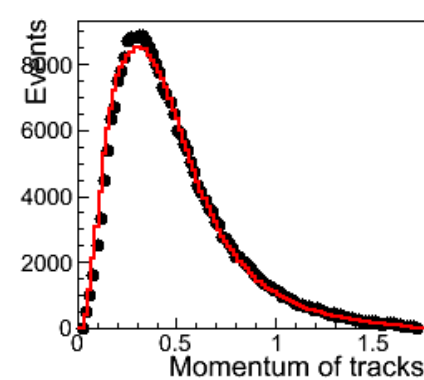
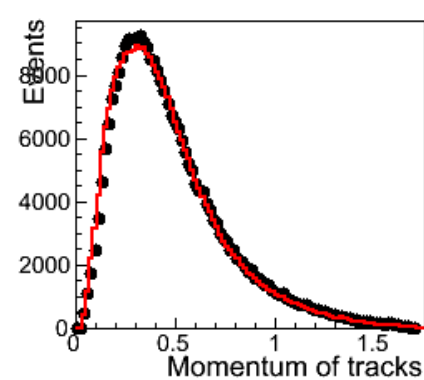
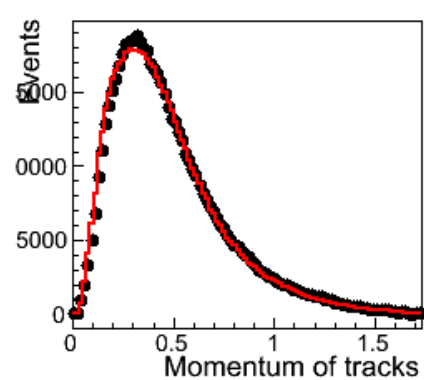
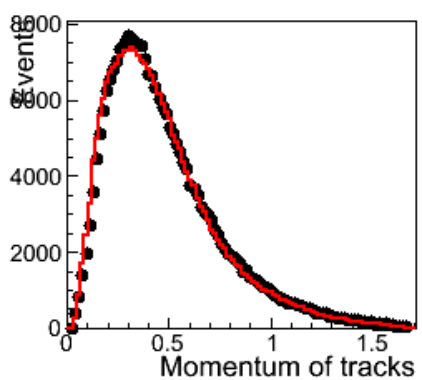
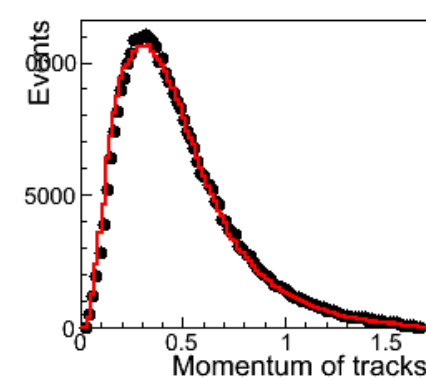
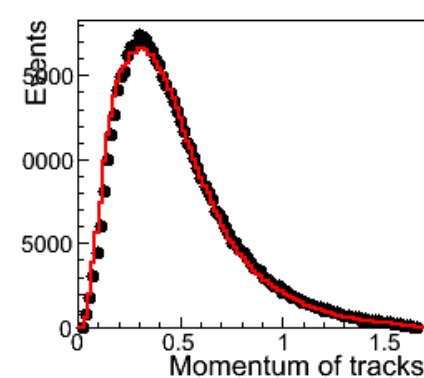
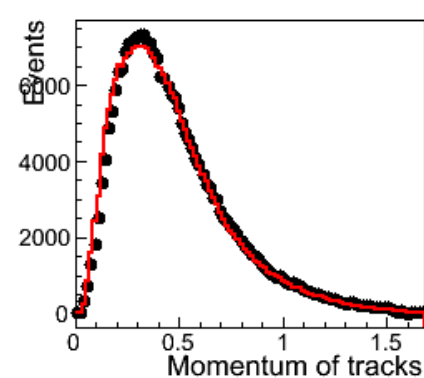
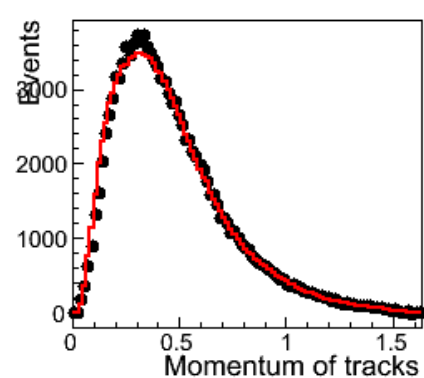
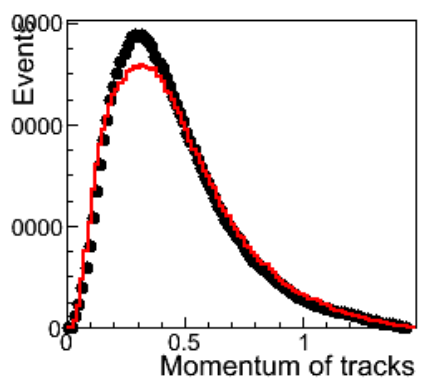
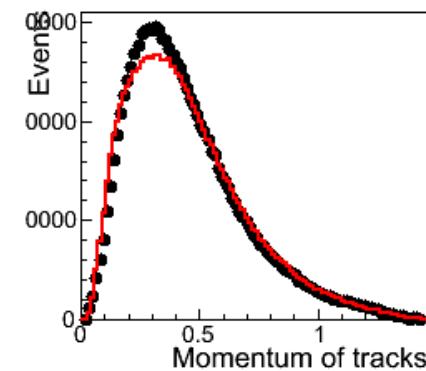
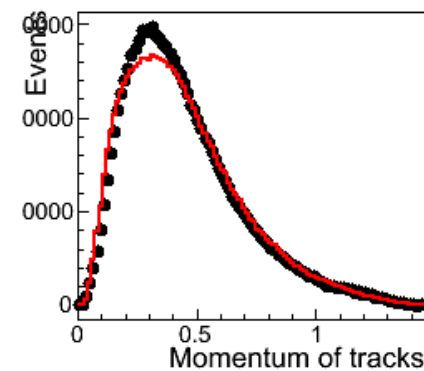
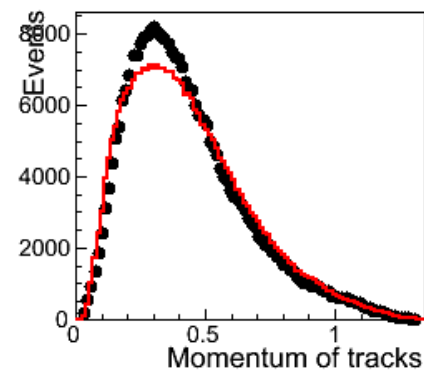
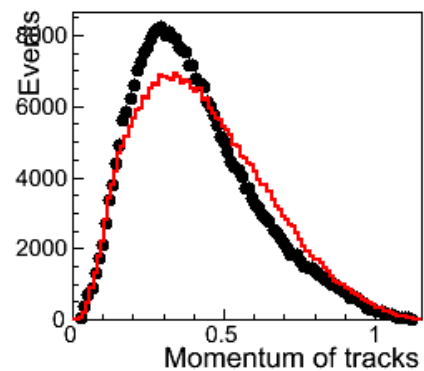
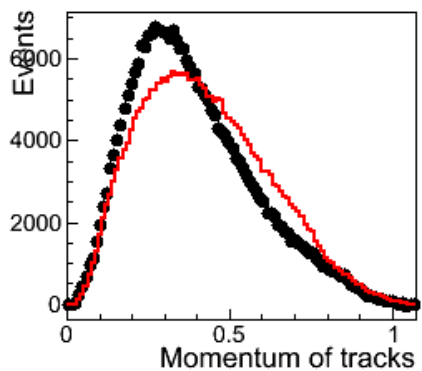
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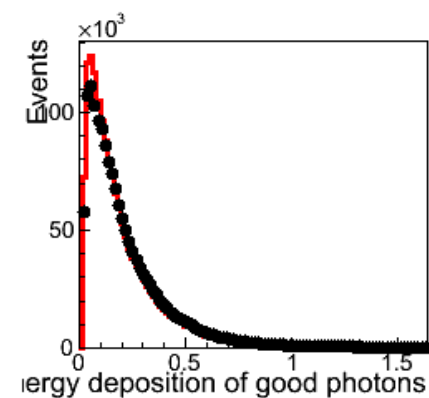
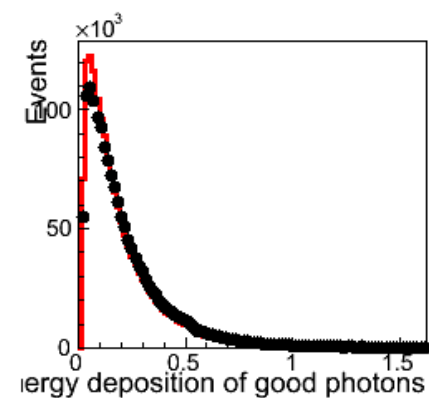
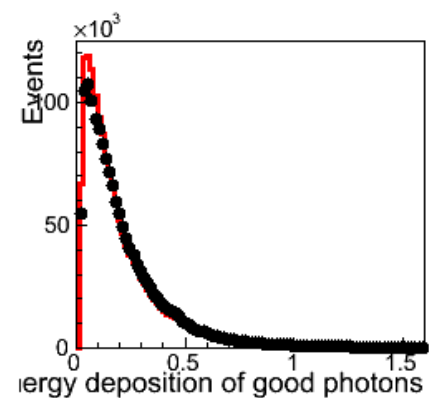
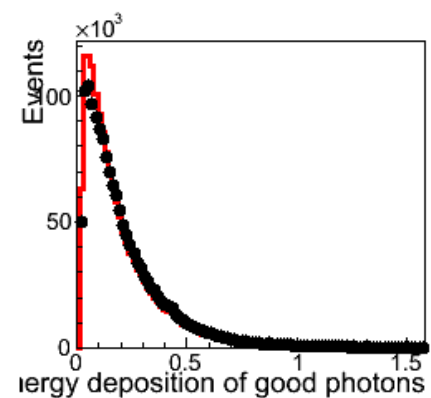
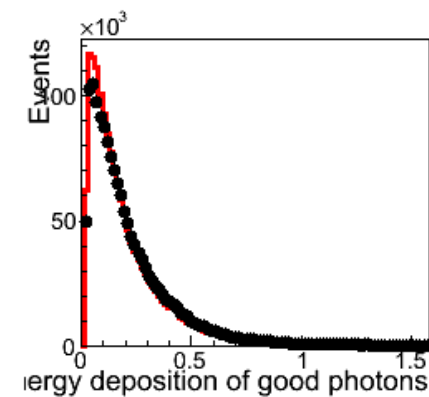
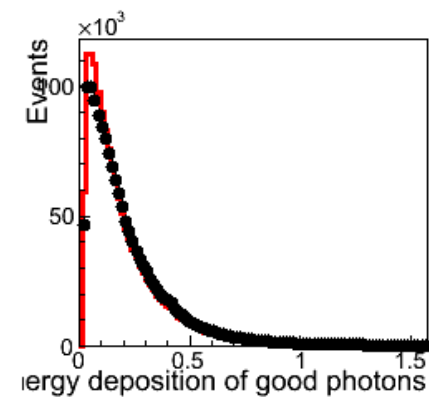
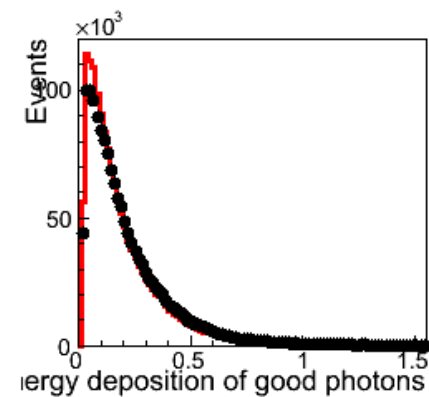
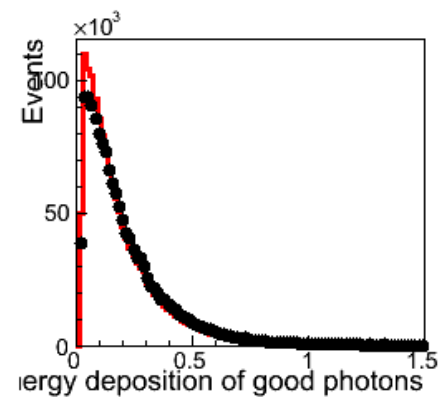
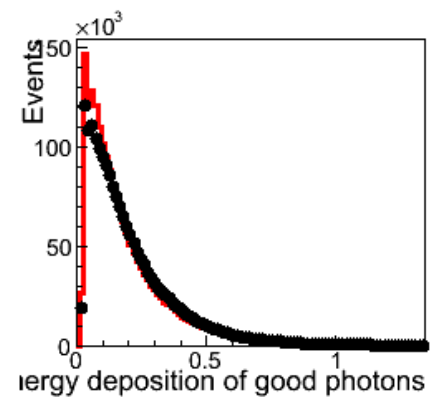
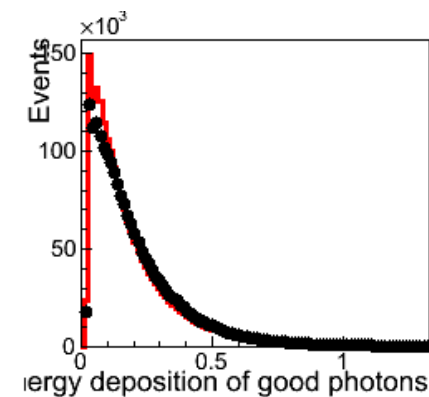
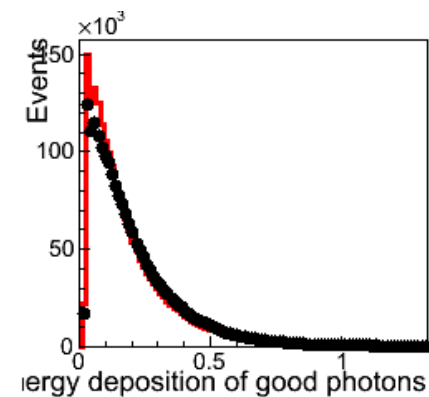
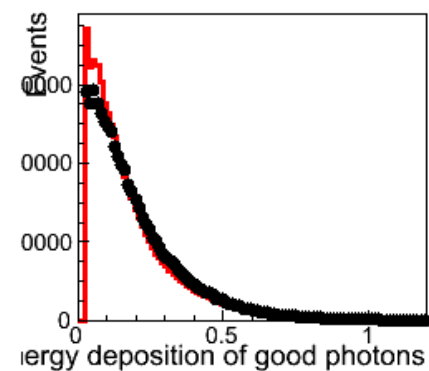
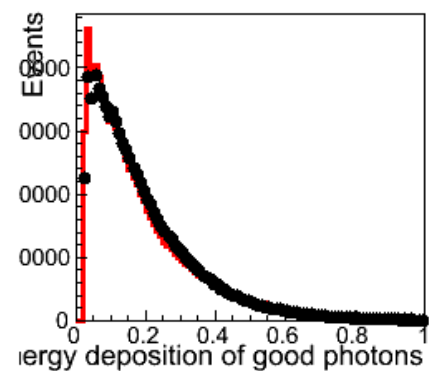
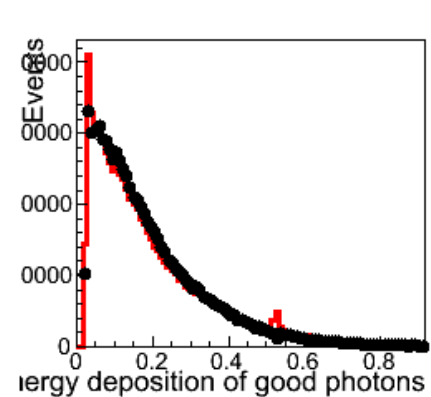
$\cos\theta$



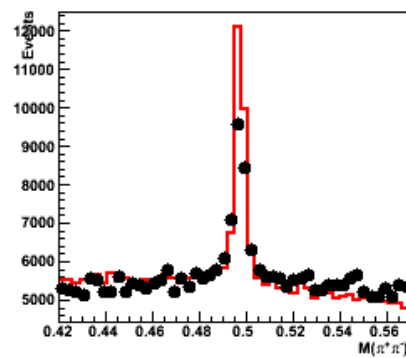
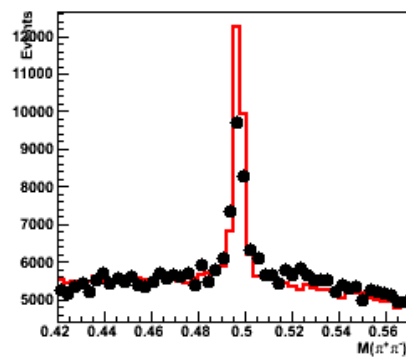
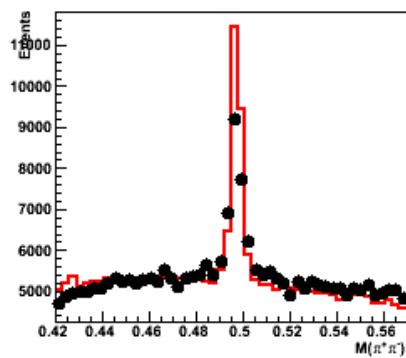
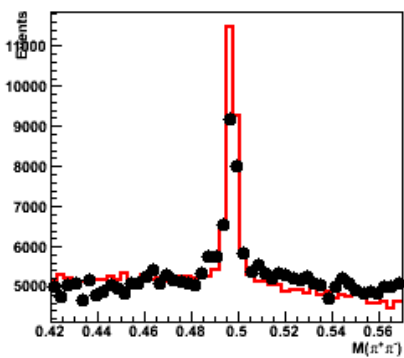
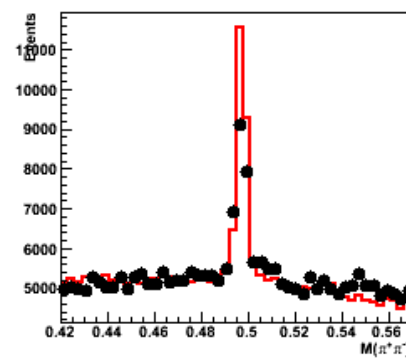
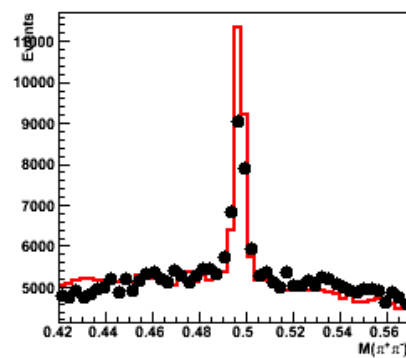
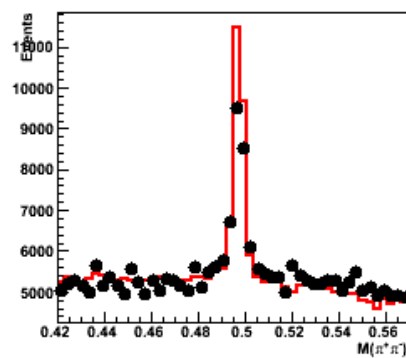
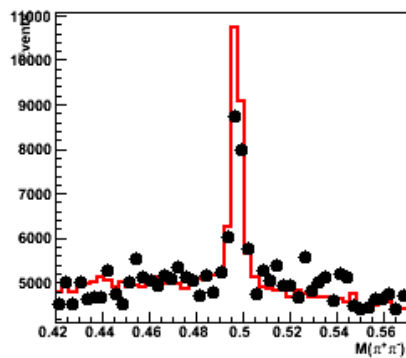
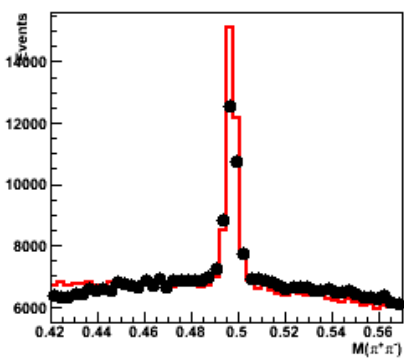
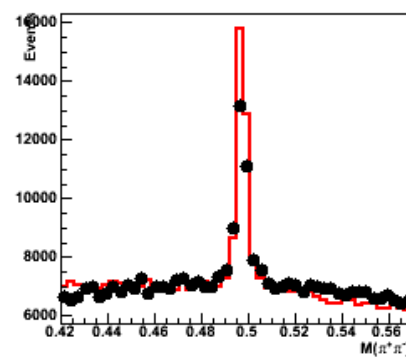
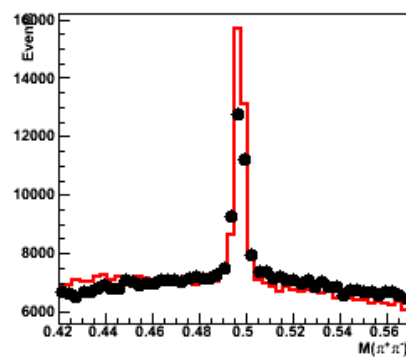
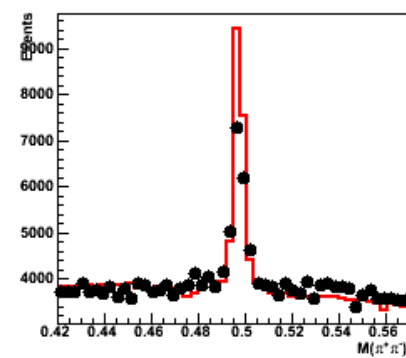
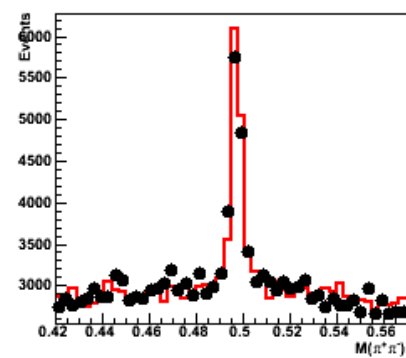
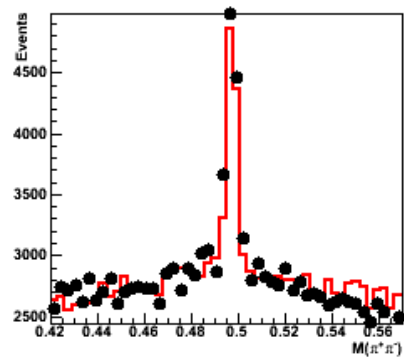
$\phi$



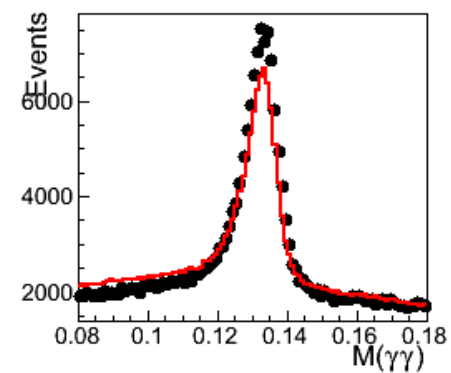
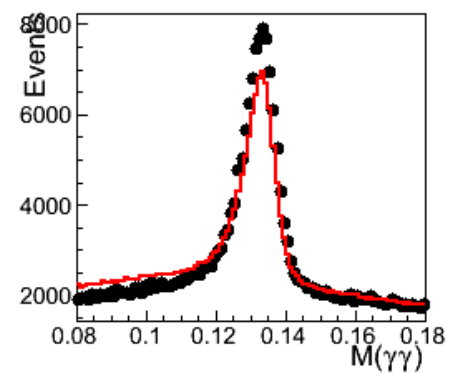
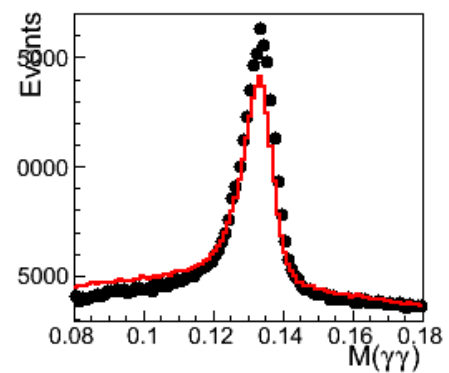
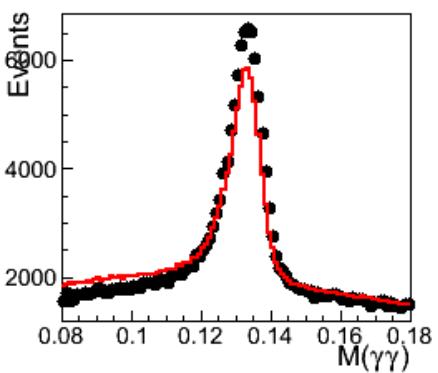
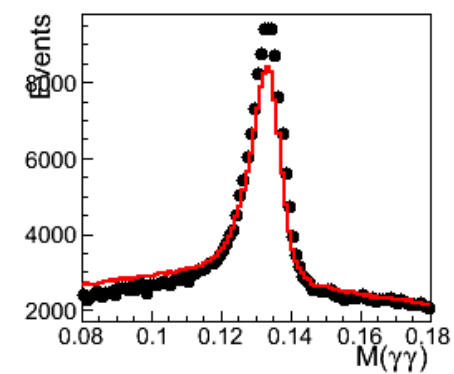
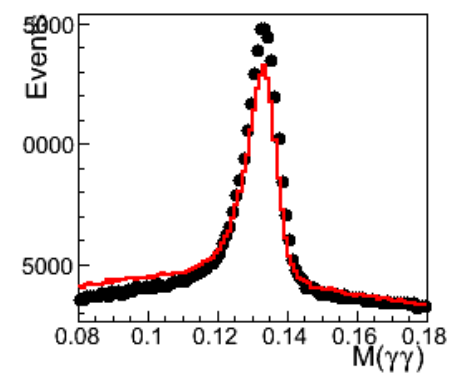
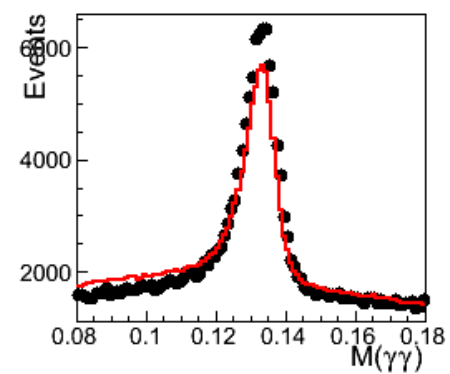
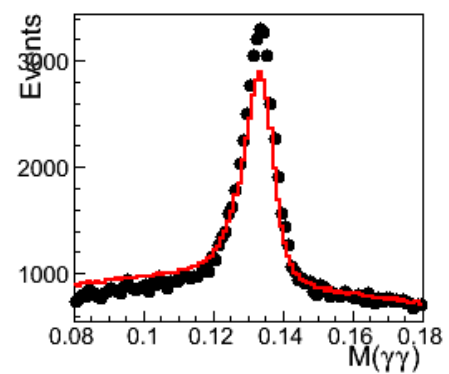
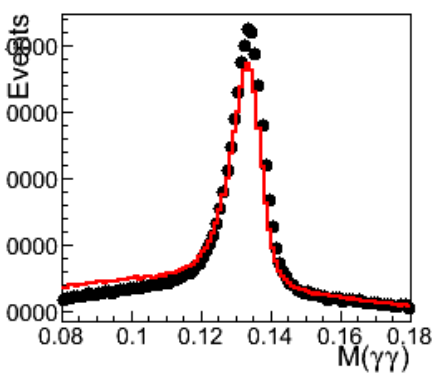
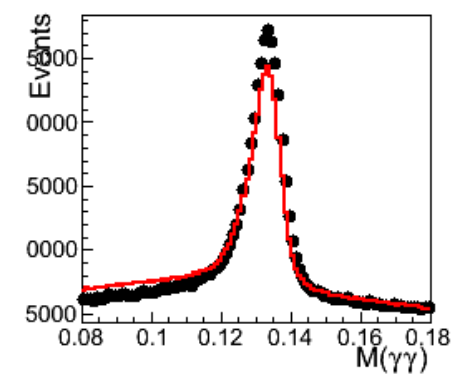
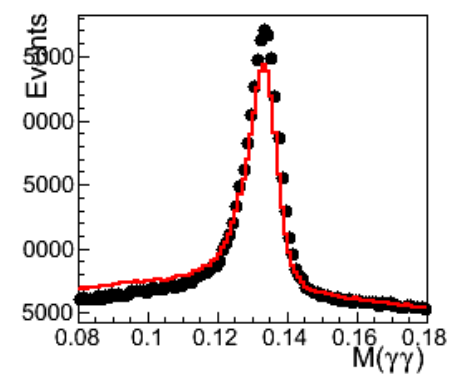
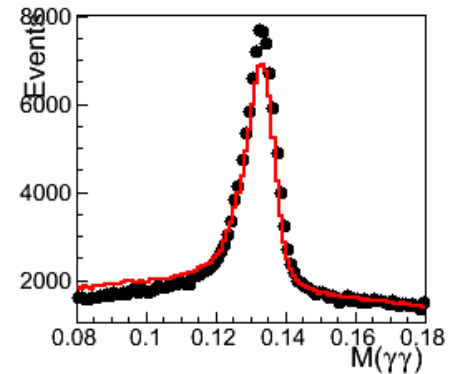
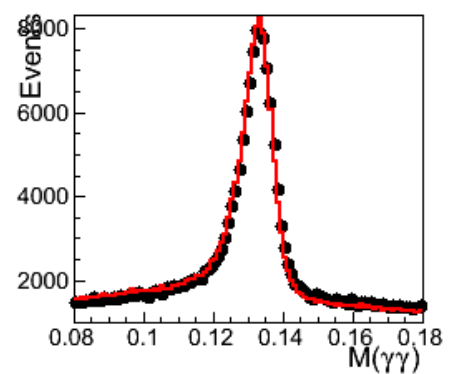
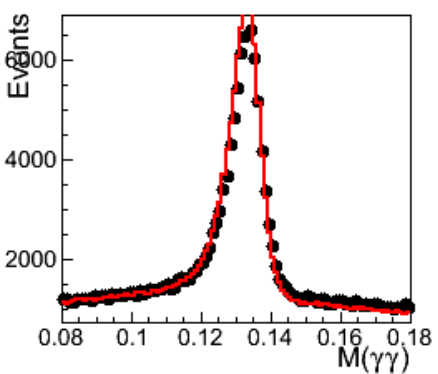
**p(trk)**



$E(\text{gam})$



$M(\pi\pi)$


$$M(\gamma\gamma)$$

# Efficiency check

| Ecm    | ConExc (old) | ConExc+Phokhara (new) | Diff (%)       |
|--------|--------------|-----------------------|----------------|
| 2.2324 | 71.00        | 61.79                 |                |
| 2.4    | 73.00        | 62.75                 |                |
| 2.8    | 76.86        | 66.37                 |                |
| 3.05   | 79.04        | 67.87                 |                |
| 3.06   | 79.15        | 67.75                 |                |
| 3.08   | 78.87        | 67.13                 |                |
| 3.4    | 79.66        | 68.94                 | Too<br>Large ! |
| 3.5    | 80.66        | 69.62                 |                |
| 3.5424 | 80.47        | 69.30                 |                |
| 3.5538 | 80.35        | 69.15                 |                |
| 3.5611 | 80.41        | 69.00                 |                |
| 3.6002 | 80.56        | 67.48                 |                |
| 3.65   | 81.78        | 69.72                 |                |
| 3.671  | 81.81        | 69.48                 |                |

# Cut flow

| @2.2324 GeV           |                  | Old version ConExc |        | New version ConExc |        |
|-----------------------|------------------|--------------------|--------|--------------------|--------|
| Total                 |                  | 50000              |        | 50000              |        |
| Veto Bhabha           |                  | 49972              | 99.94% | 49977              | 99.95% |
| N <sub>Good</sub> ≥ 2 |                  | 42766              | 85.58% | 40070              | 80.18% |
| N <sub>Good</sub> = 2 |                  | 17247              |        | 18867              |        |
|                       | Δθ&Δφ            | 16073              | 93.19% | 17557              | 93.06% |
|                       | N <sub>iso</sub> | 11738              | 73.03% | 11038              | 62.87% |
| N <sub>Good</sub> = 3 |                  | 9172               | 95.09% | 7280               | 94.99% |
|                       | Δθ&Δφ            | 8722               |        | 6915               |        |
| N <sub>Good</sub> ≥ 3 |                  | 16347              |        | 13923              |        |
| Final events          |                  | 36807              |        | 31876              |        |