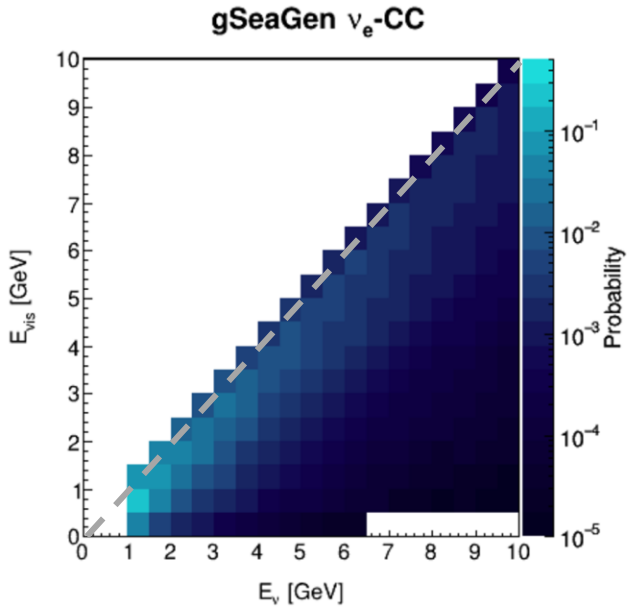
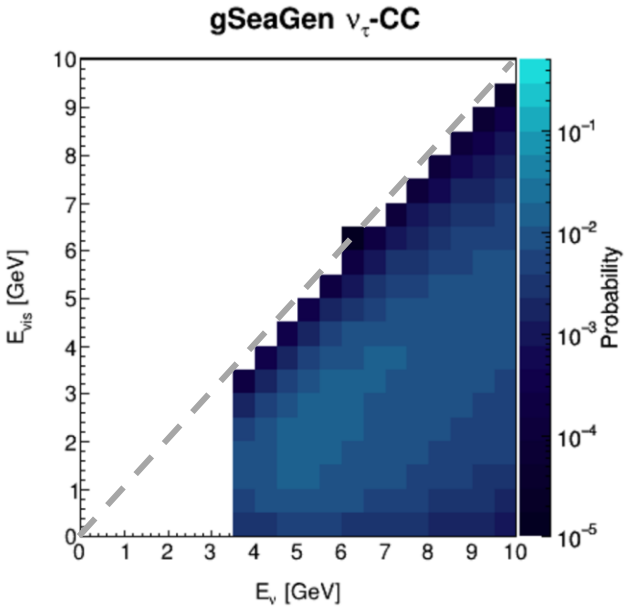
GiBUU – gSeaGen comparison

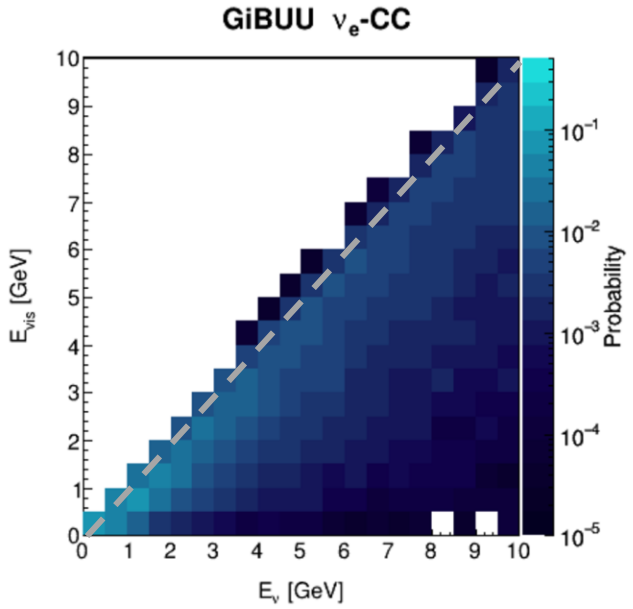
1. Visible energy

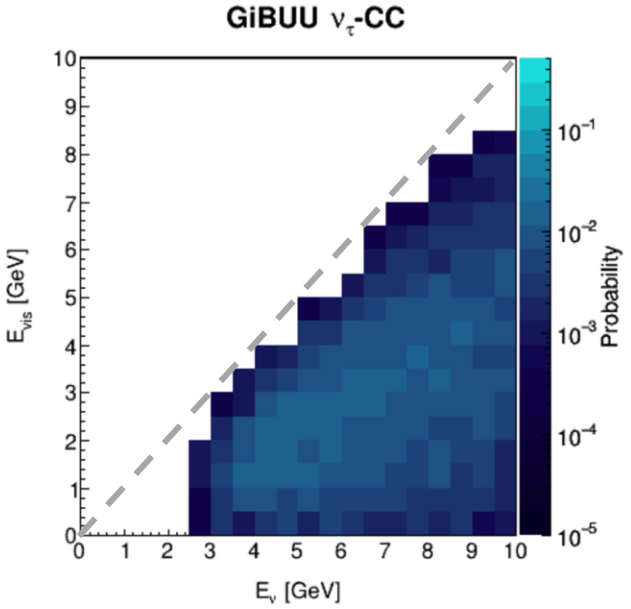
- Length-integrated energy loss for muons
- Total (kinetic) energy for
  photons / electrons / neutral pions
- EM-equivalent energy for
  charged pions and other mesons / hadrons

- Visible energy profiles look largely compatible
  - Energy threshold lower in GiBUU production
  - A few entries $E_{vis} > E_{\nu}$
    - --> **Check energy conservation**
  - Somewhat smaller visible energy depositions for ν_τ in GiBUU
    - Could be due to limited statistics









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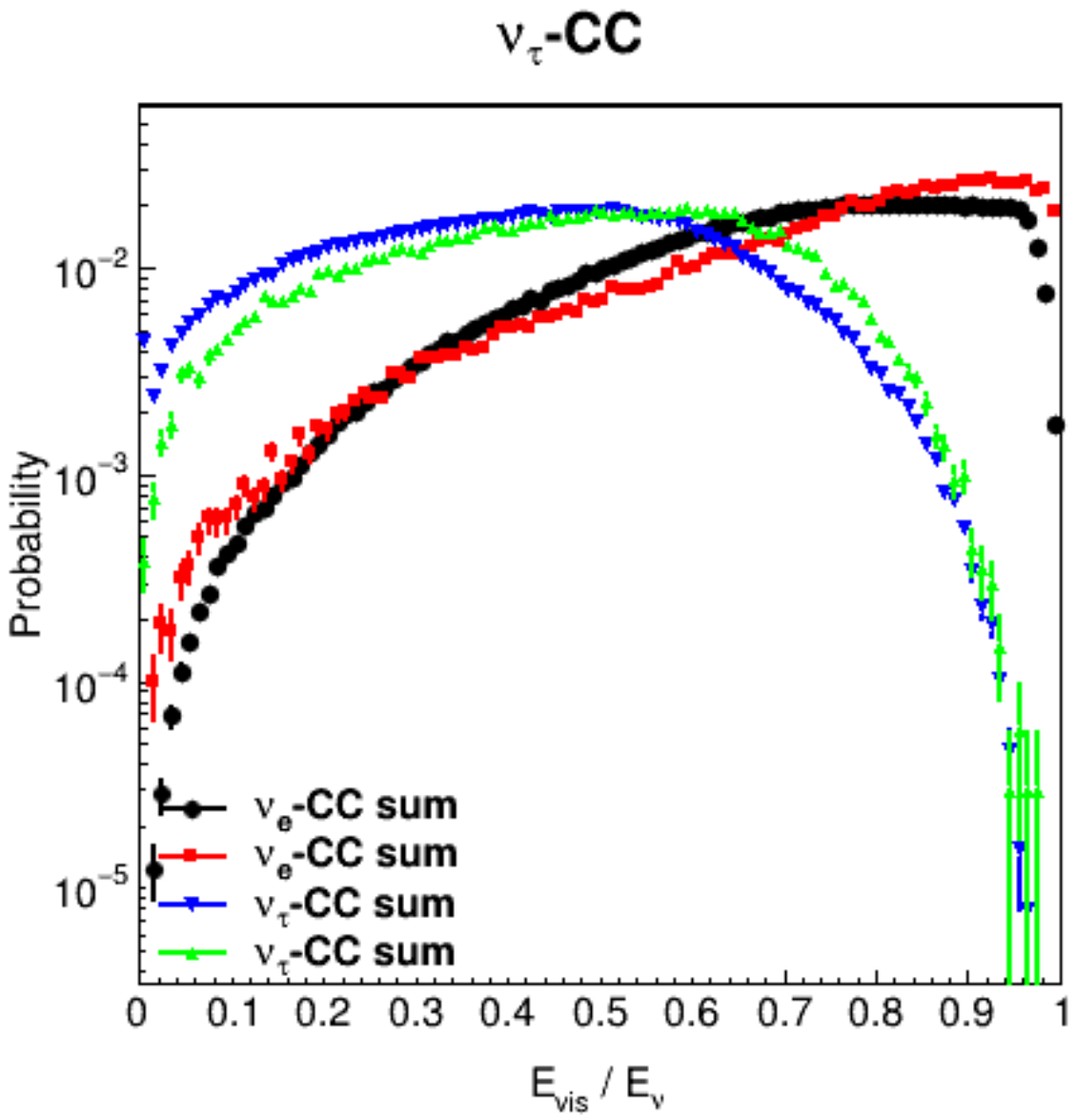
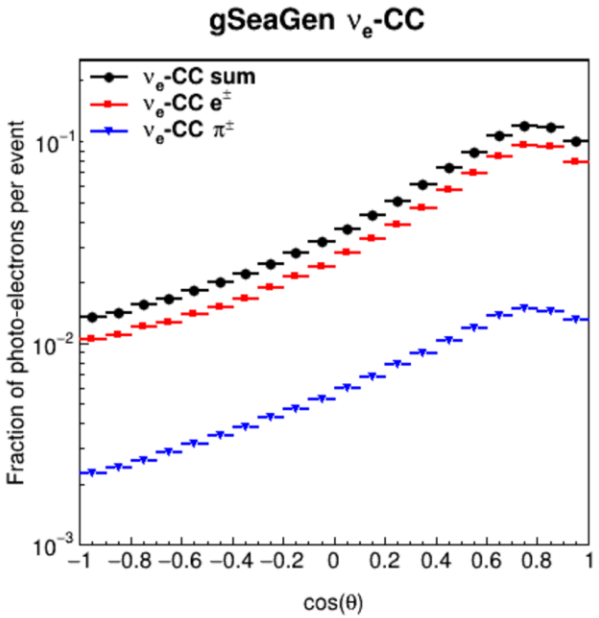
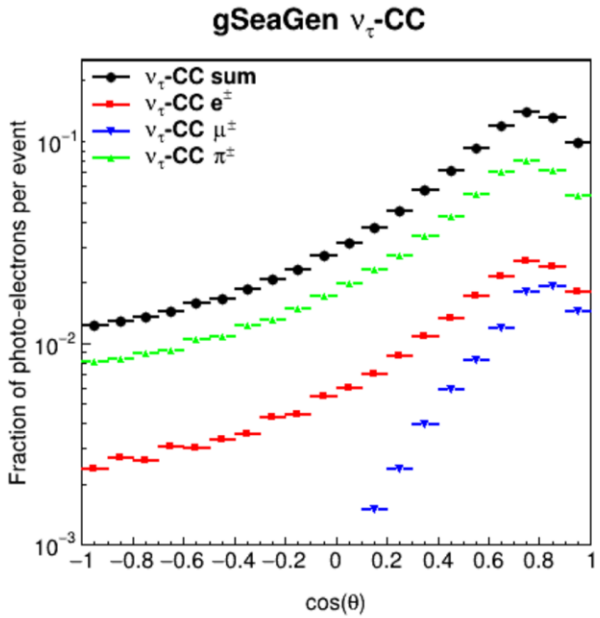
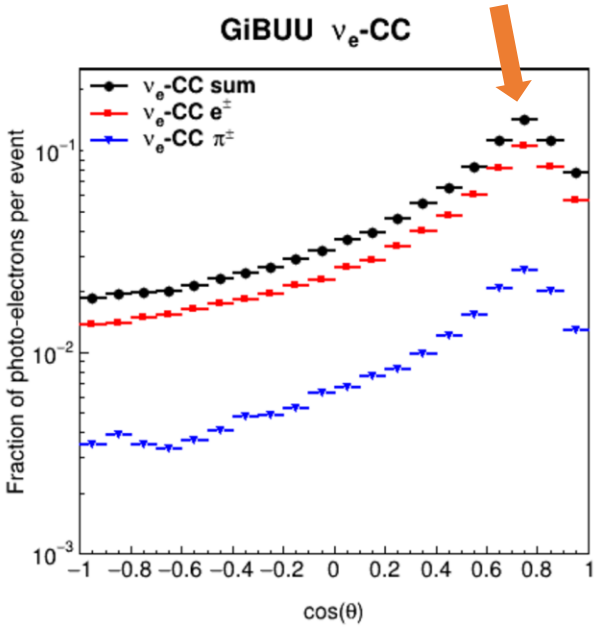
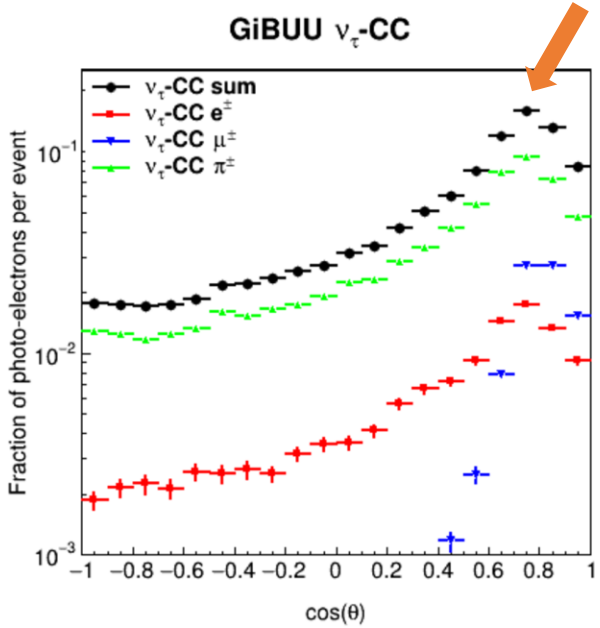


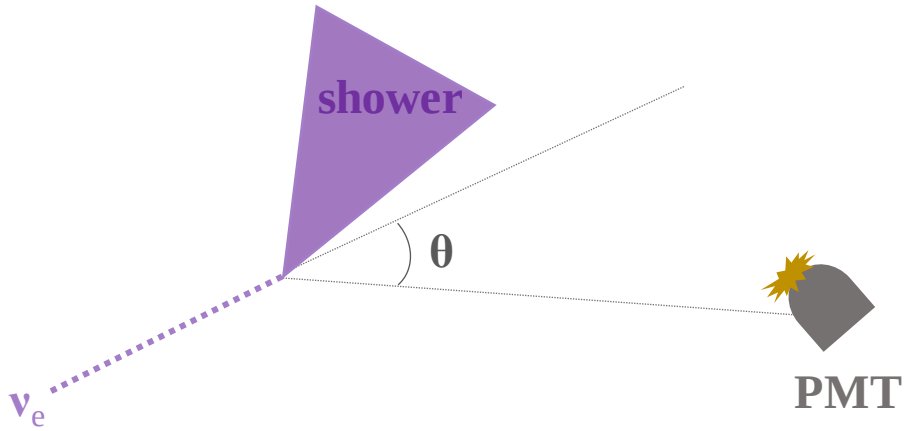




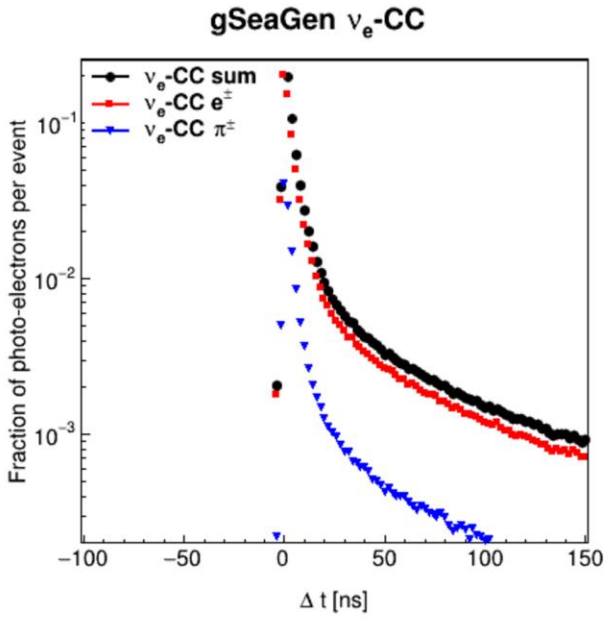


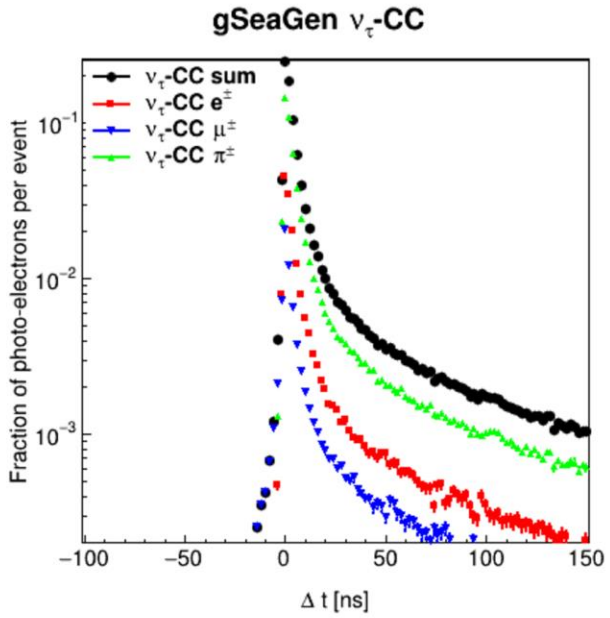


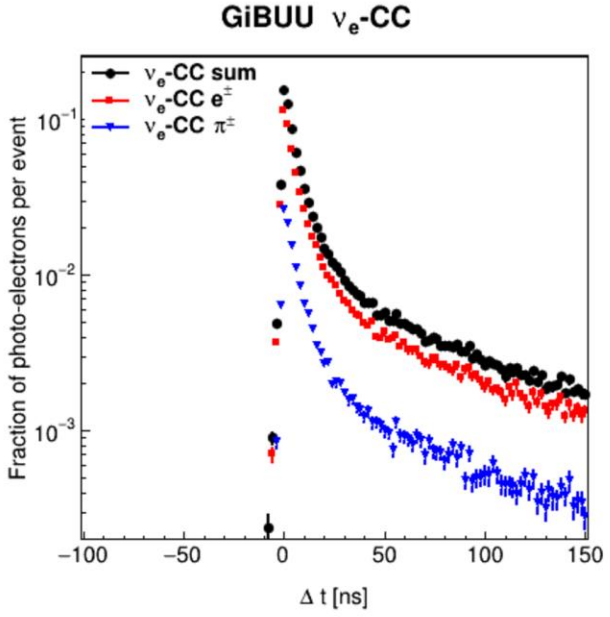
- Hit topology from JSirene
  - Angle vertex-PMT and neutrino direction

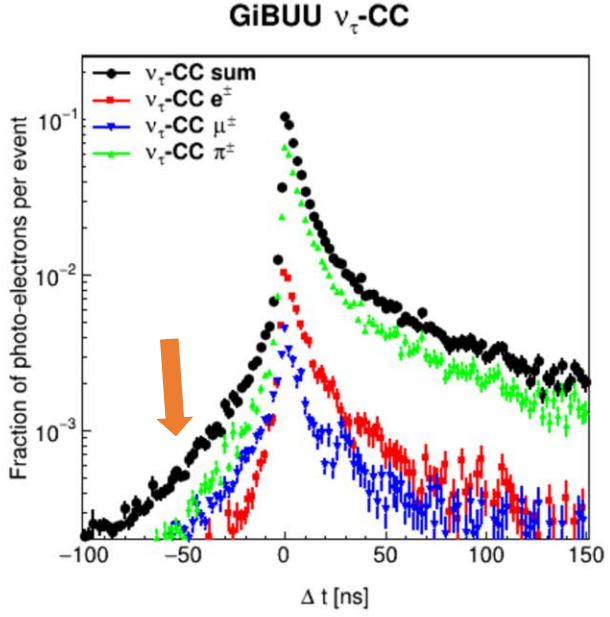


  - GiBUU data generally more peaked
    - **Muons** much more forward-directed









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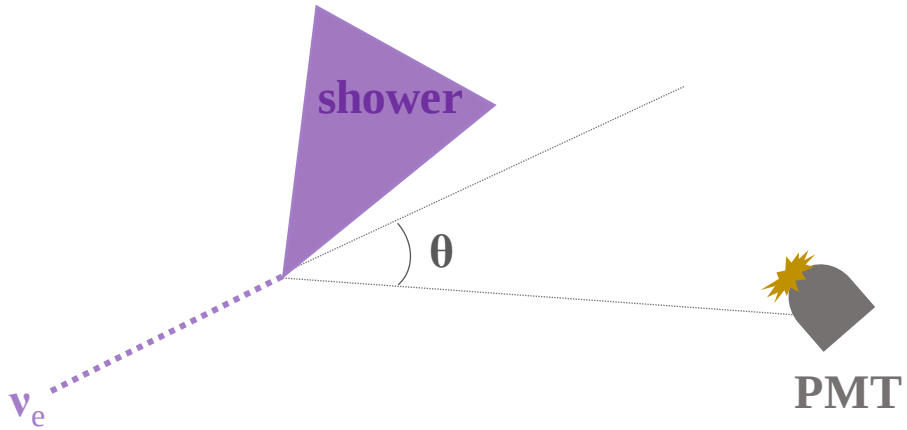

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    - **Muons** much more forward-directed
  - Much more early hits in GiBUU-ν_τ