

Delphes Studies on Angles of Acceptance

Nathan Wagner

July 17, 2023



- ① I performed a deeper analysis of the angular distribution for generated jets
- ② I focused more on $\mu^+\mu^- \rightarrow \nu_\mu\bar{\nu}_\mu$ processes, and simulated $\mu^+\mu^- \rightarrow \nu_\mu\bar{\nu}_\mu \rightarrow H$ and $\mu^+\mu^- \rightarrow \nu_\mu\bar{\nu}_\mu \rightarrow HH$ processes in cases where H is forced to decay to $b\bar{b}$ and where H can decay freely.

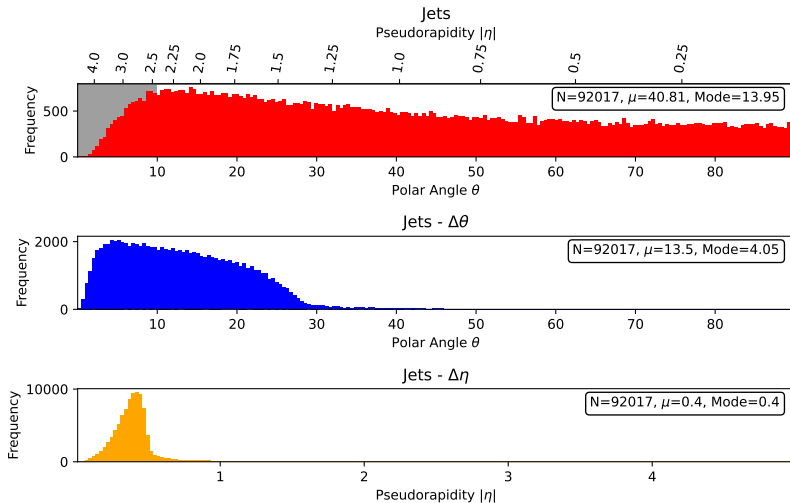


Figure: Process: $\mu^+\mu^- \rightarrow \nu_\mu\bar{\nu}_\mu H, H \rightarrow b\bar{b}$ at $\sqrt{s} = 3\text{TeV}$, $N_{\text{events}} = 50,000$

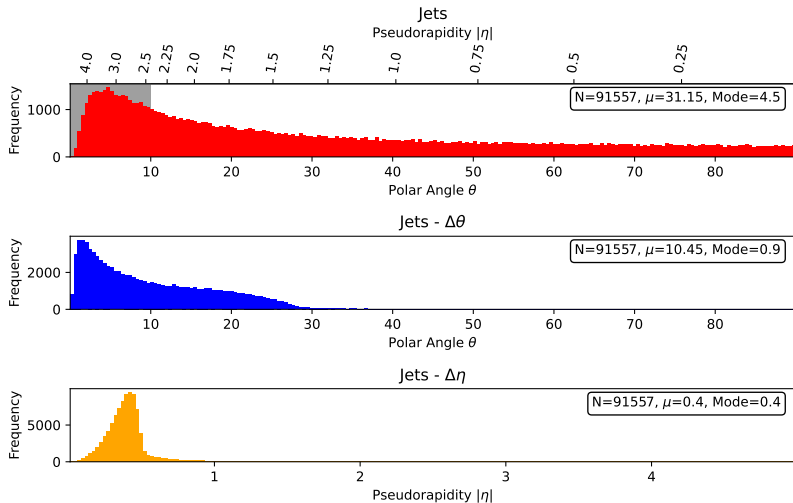


Figure: Process: $\mu^+\mu^- \rightarrow \nu_\mu\bar{\nu}_\mu H, H \rightarrow b\bar{b}$ at $\sqrt{s} = 10\text{TeV}$, $N_{\text{events}} = 50,000$

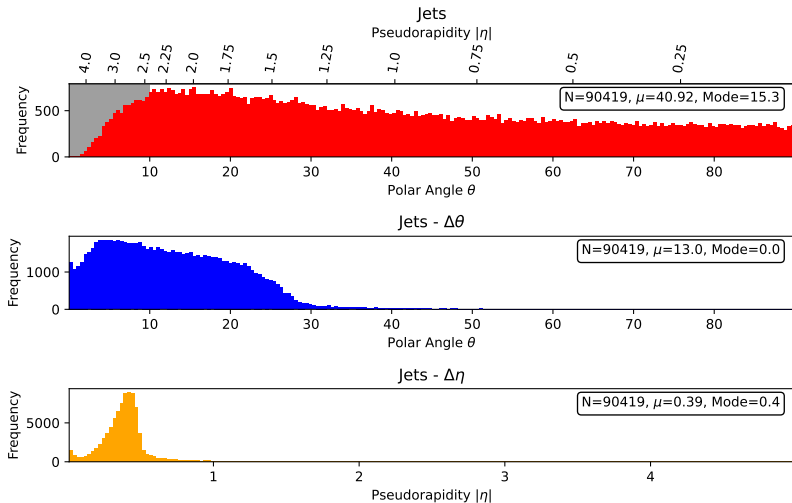


Figure: Process: $\mu^+\mu^- \rightarrow \nu_\mu\bar{\nu}_\mu H$ at $\sqrt{s} = 3\text{TeV}$, $N_{\text{events}} = 50,000$

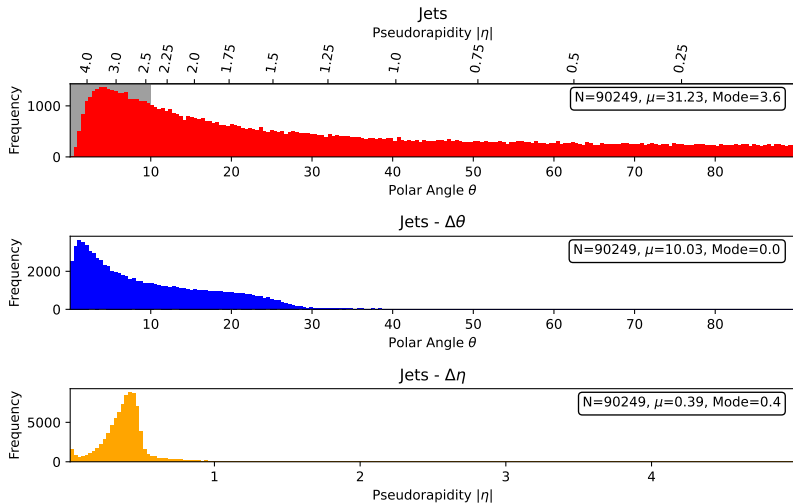


Figure: Process: $\mu^+\mu^- \rightarrow \nu_\mu\bar{\nu}_\mu H$ at $\sqrt{s} = 10\text{TeV}$, $N_{\text{events}} = 50,000$

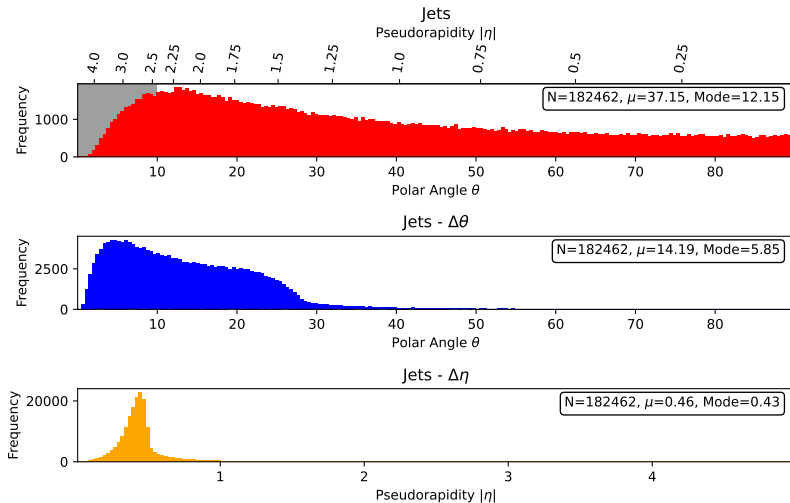


Figure: Process: $\mu^+\mu^- \rightarrow \nu_\mu\bar{\nu}_\mu HH, H \rightarrow b\bar{b}$ at $\sqrt{s} = 3\text{TeV}$, $N_{\text{events}} = 50,000$

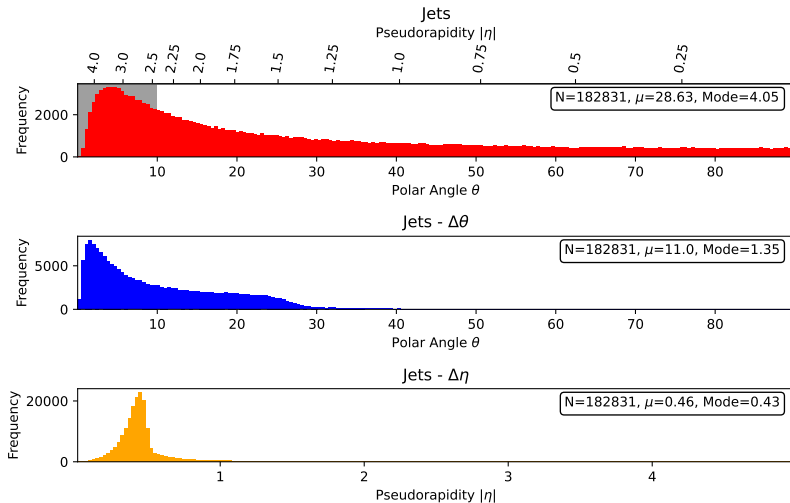


Figure: Process: $\mu^+\mu^- \rightarrow \nu_\mu\bar{\nu}_\mu HH, H \rightarrow b\bar{b}$ at $\sqrt{s} = 10\text{TeV}$, $N_{\text{events}} = 50,000$

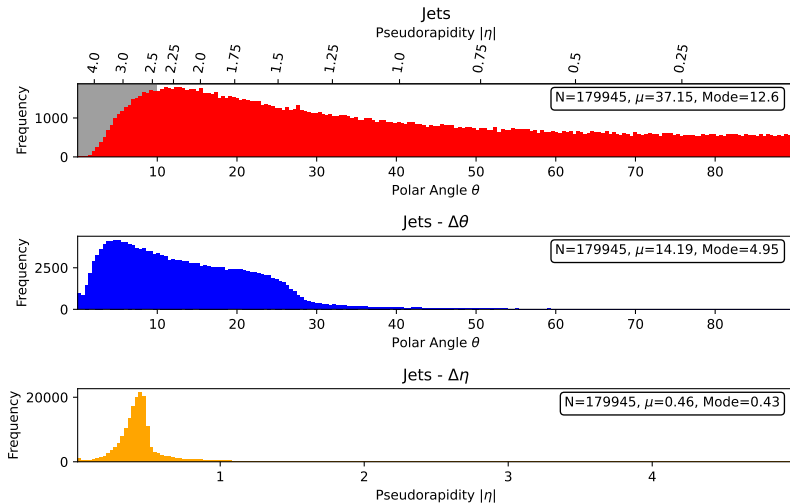


Figure: Process: $\mu^+\mu^- \rightarrow \nu_\mu\bar{\nu}_\mu HH$ at $\sqrt{s} = 3\text{ TeV}$, $N_{\text{events}} = 50,000$

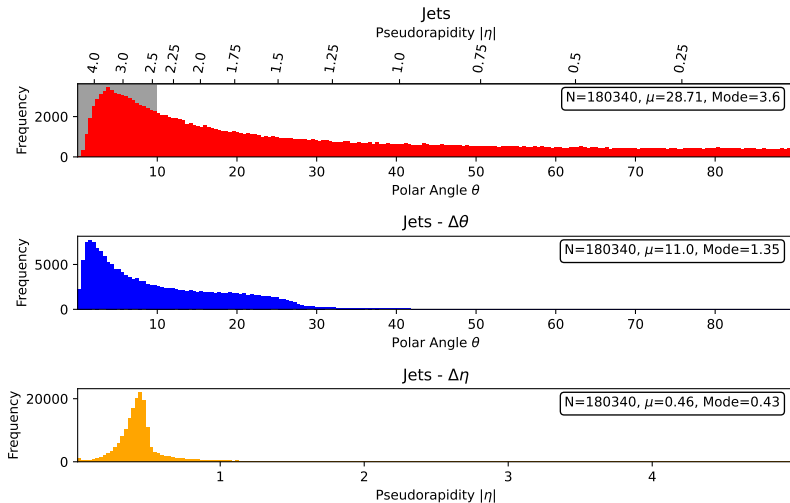


Figure: Process: $\mu^+\mu^- \rightarrow \nu_\mu\bar{\nu}_\mu HH$ at $\sqrt{s} = 10\text{TeV}$, $N_{\text{events}} = 50,000$