Delphes Studies on Angles of Acceptance

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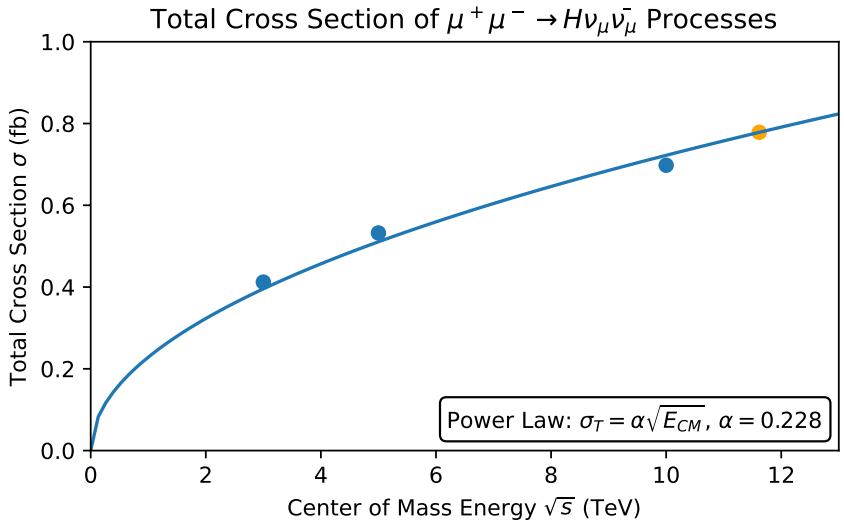
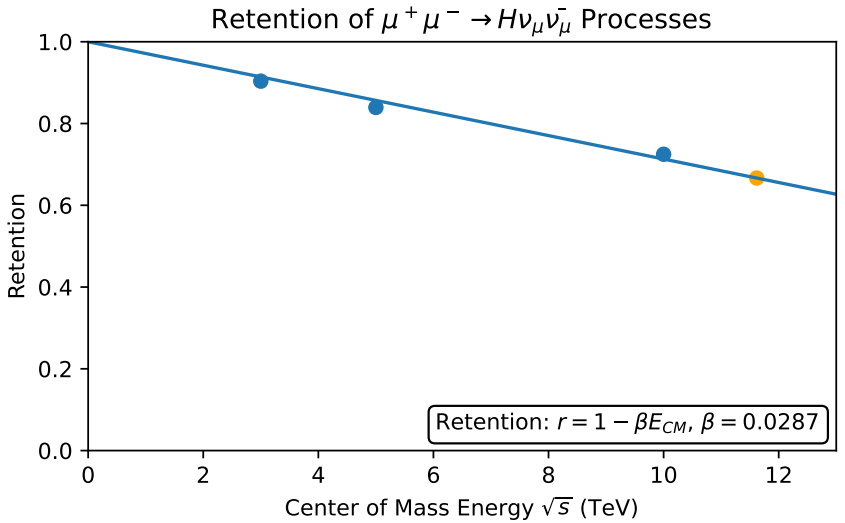
Processes

1. I ran an analysis of the total cross-section and retention of $\mu^+\mu^- \to H\nu_\mu\bar{\nu_\mu}$ and $\mu^+\mu^- \to HH\nu_\mu\bar{\nu_\mu}$ processes.
2. I approximated the total cross section σ_T vs. energy relation as a power law for each process to get a general trend for the data.
3. The retention r of the jets, or ratio of jets detected vs. total jets, was approximated with a linear relationship.
4. The optimal center of mass energy was chosen to maximize the product $p = r\sigma_T$, or the total cross section scaled by the proportion of jets detected to total jets.

Results





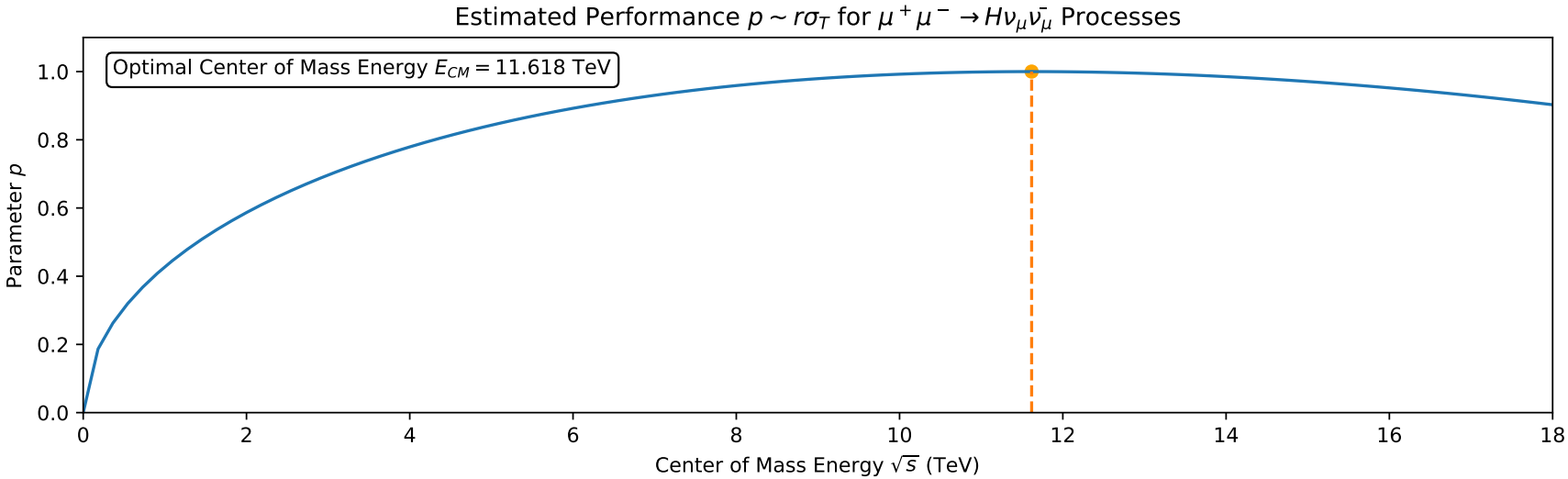
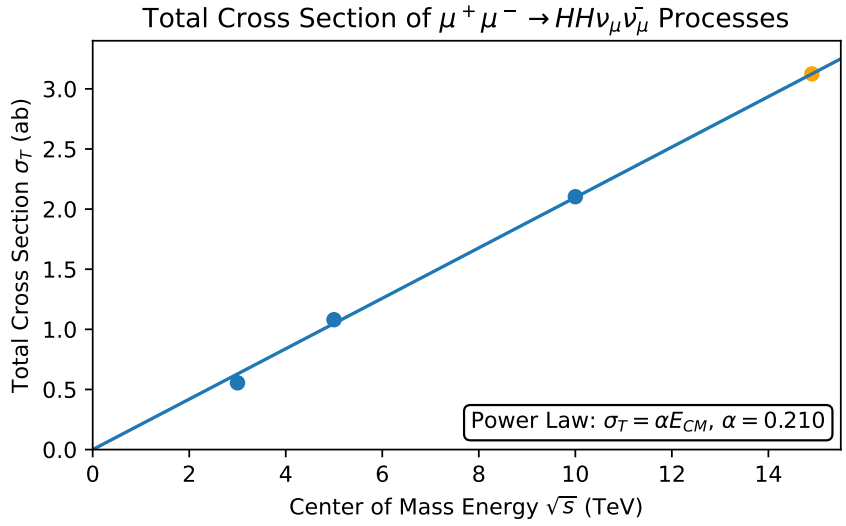
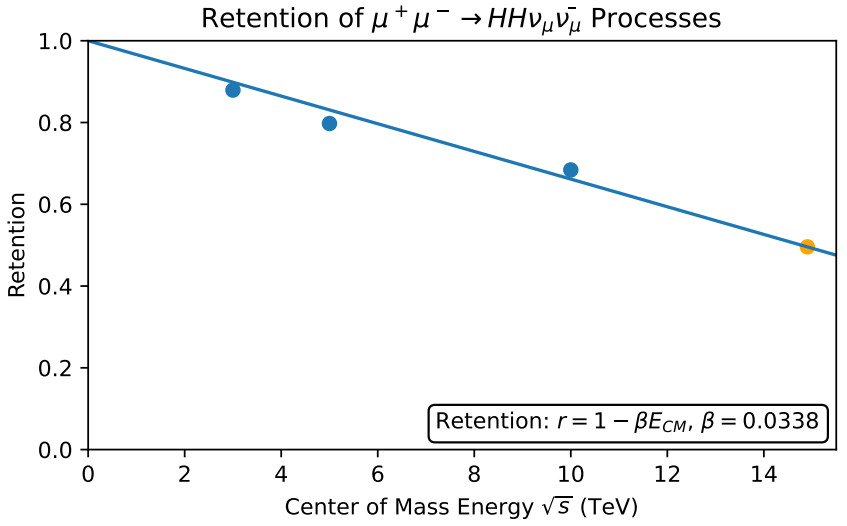


Figure: Process: $\mu^+\mu^- \to \nu_\mu\bar{\nu_\mu}H, H \to b\bar{b}, N_{\text{events}} = 50,000$

Results





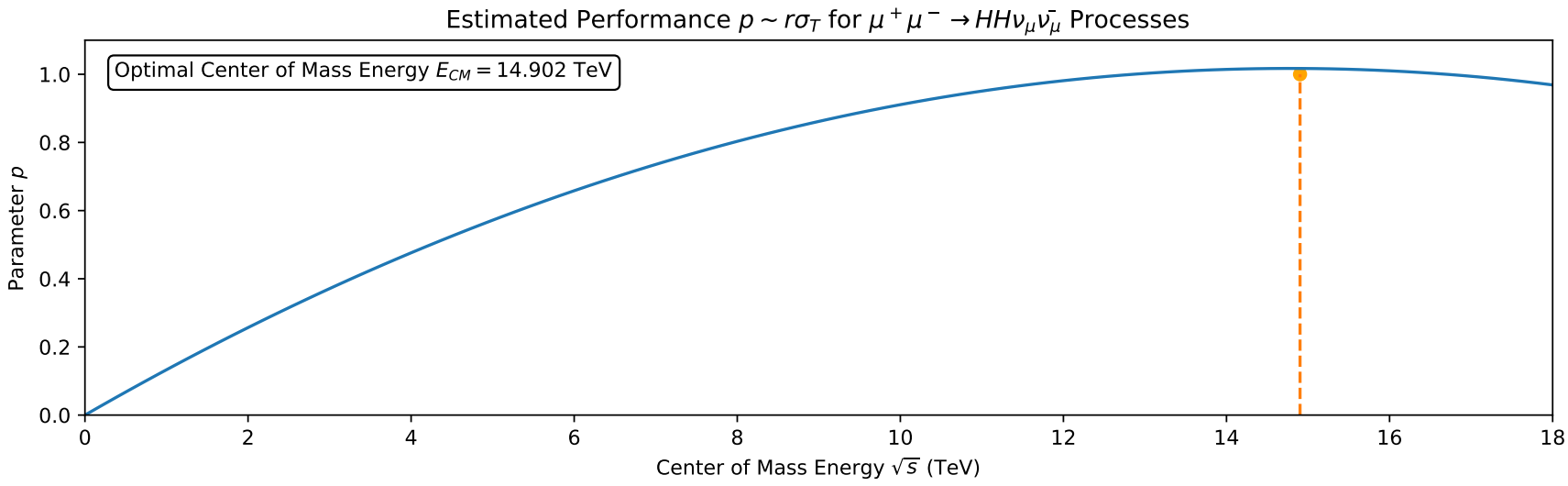


Figure: Process: $\mu^+\mu^- \to \nu_\mu\bar{\nu_\mu}HH, H \to b\bar{b}, N_{\text{events}} = 50,000$