True Muonium Simulation Report

# 1. Overview

This report presents a detailed Monte Carlo simulation of true muonium production, decay, and detector interactions...

# 2. Visualizations and Results

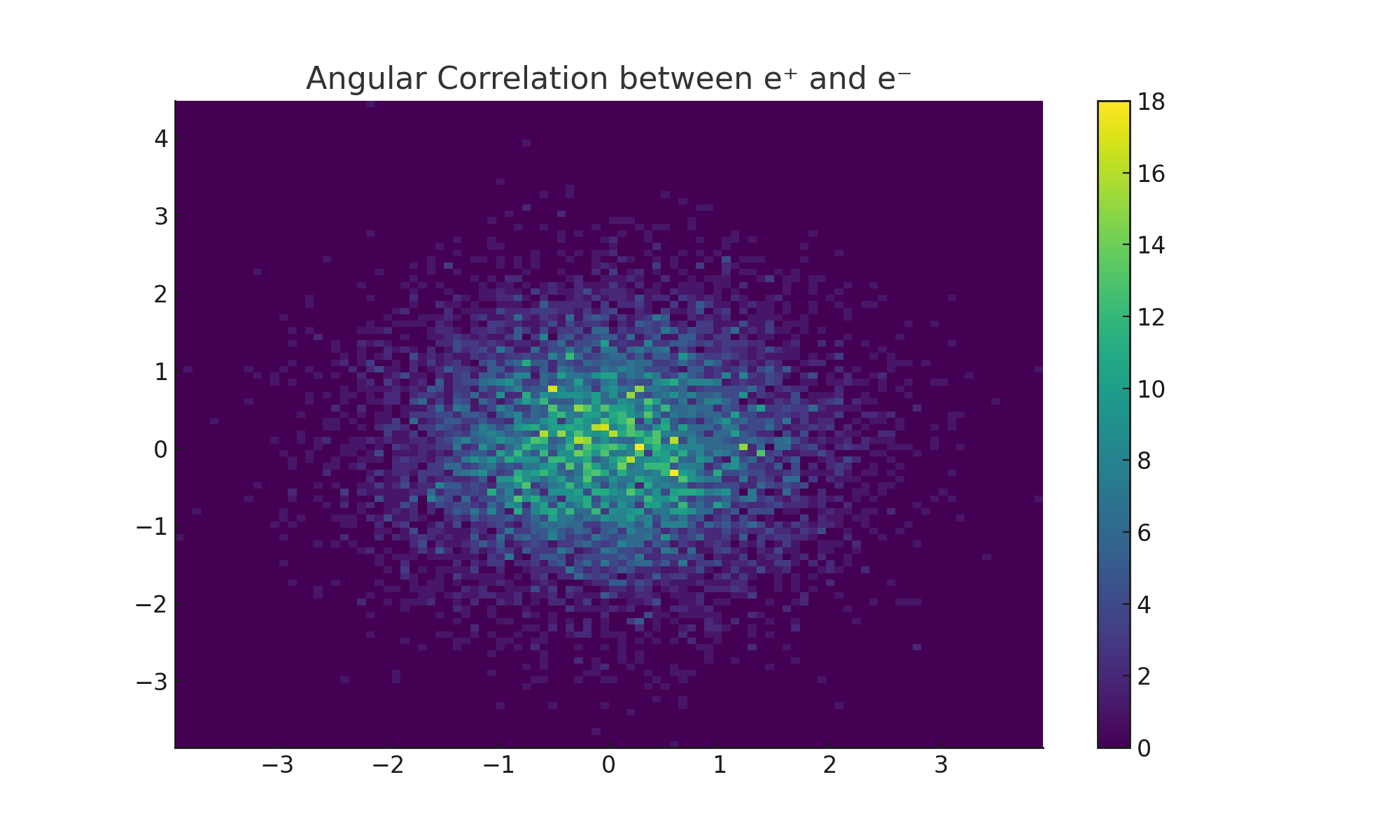


Figure 1: Angular correlation between e⁺ and e⁻.

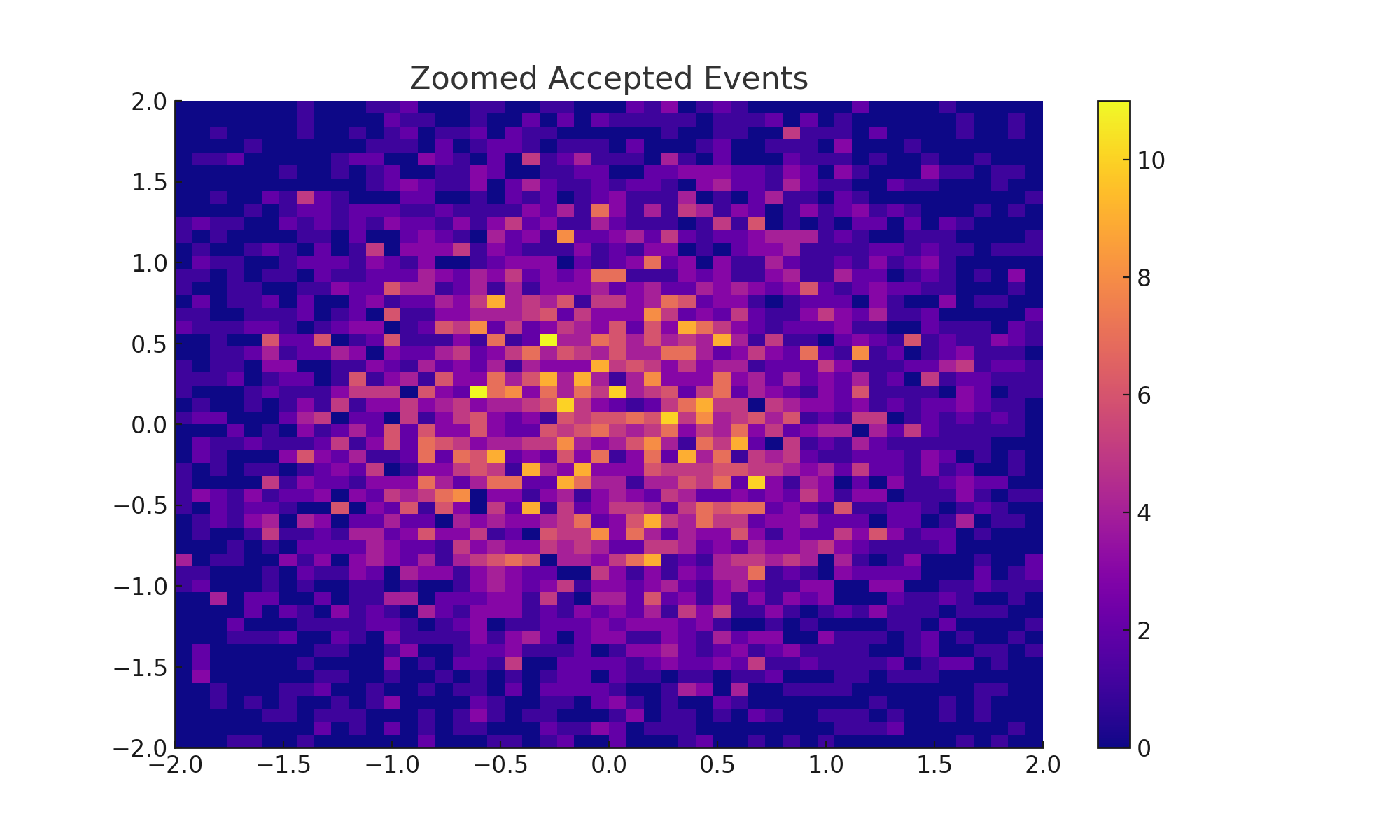


Figure 2: Zoomed-in view of accepted events (7.5–30 mrad).

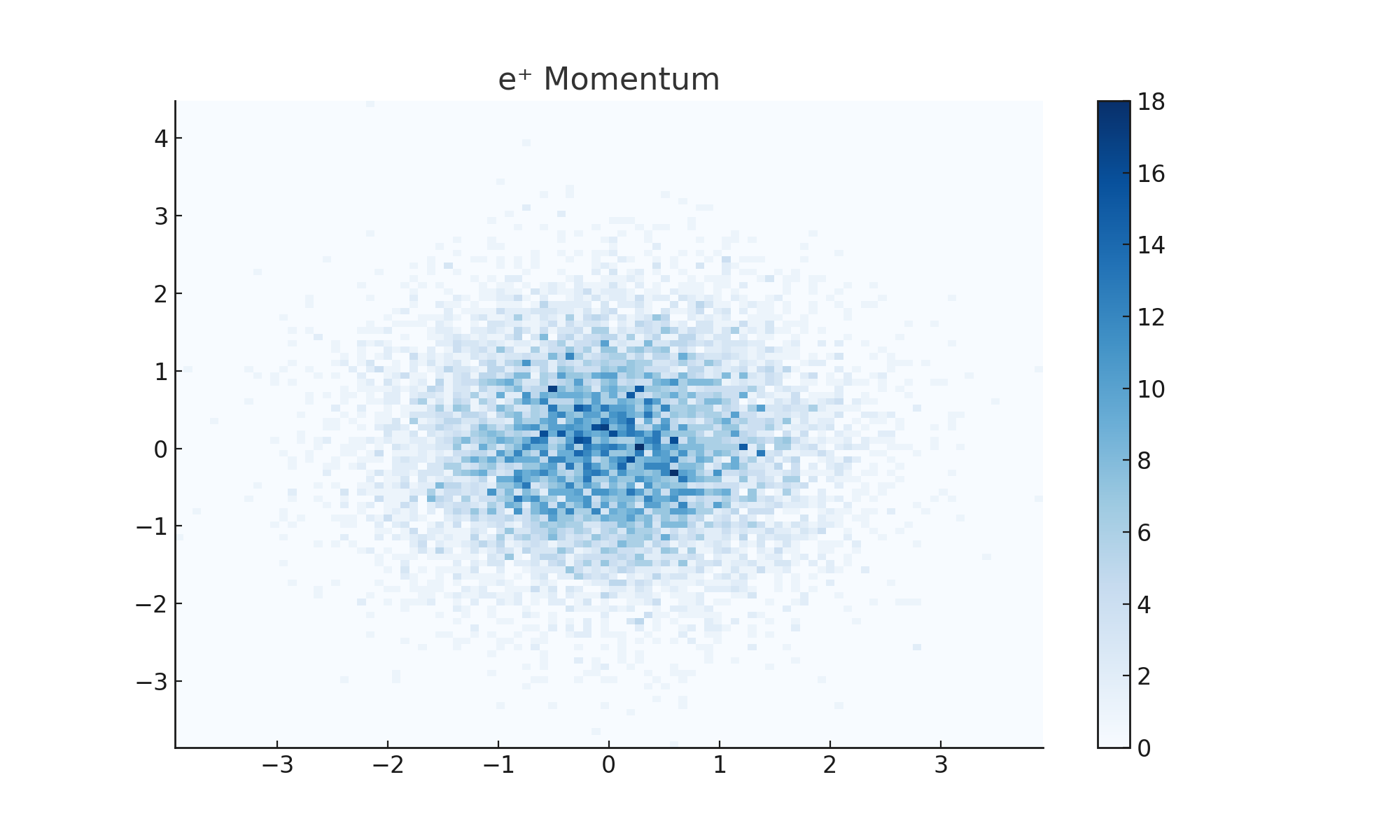


Figure 3: e⁺ momentum: p\_y vs p\_z.

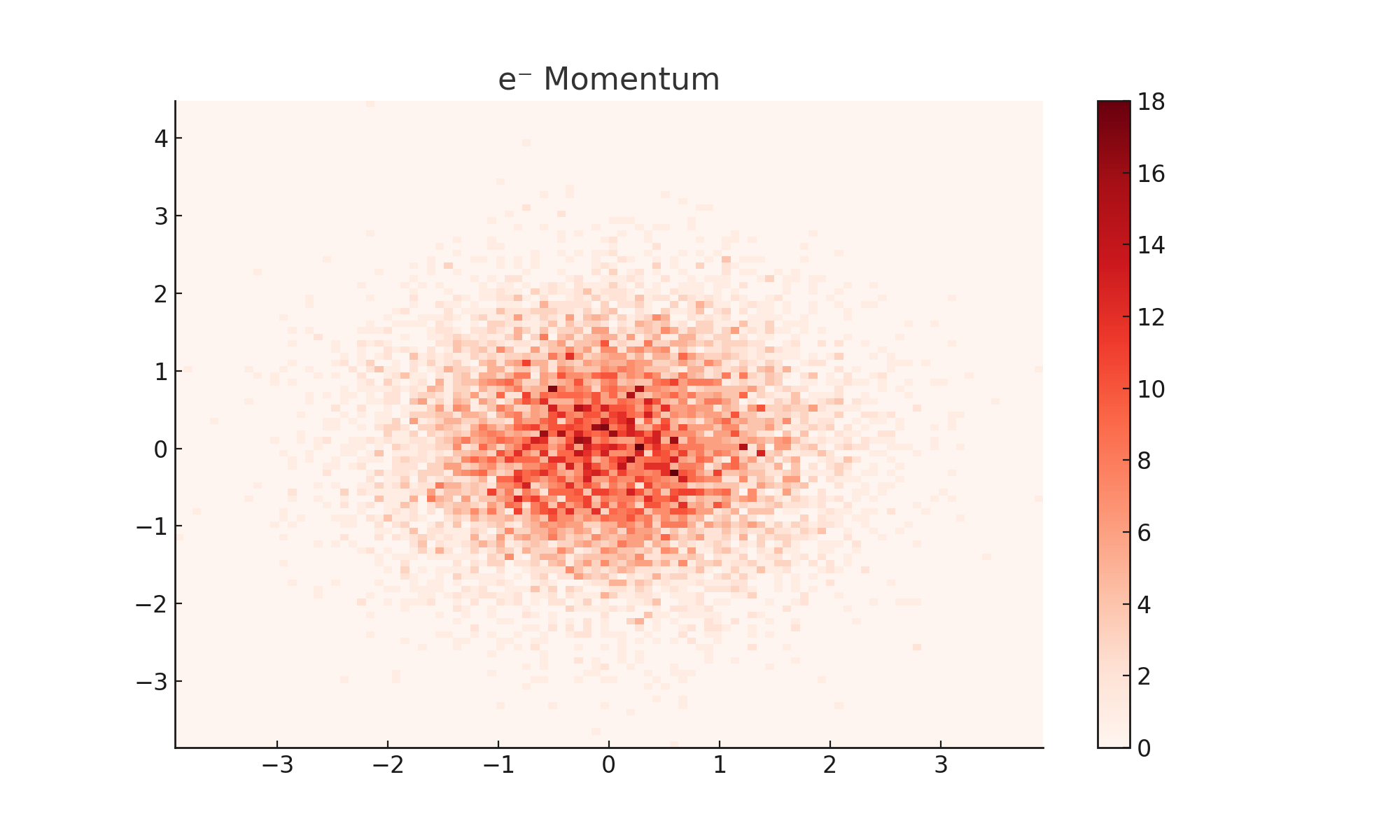


Figure 4: e⁻ momentum: p\_y vs p\_z.

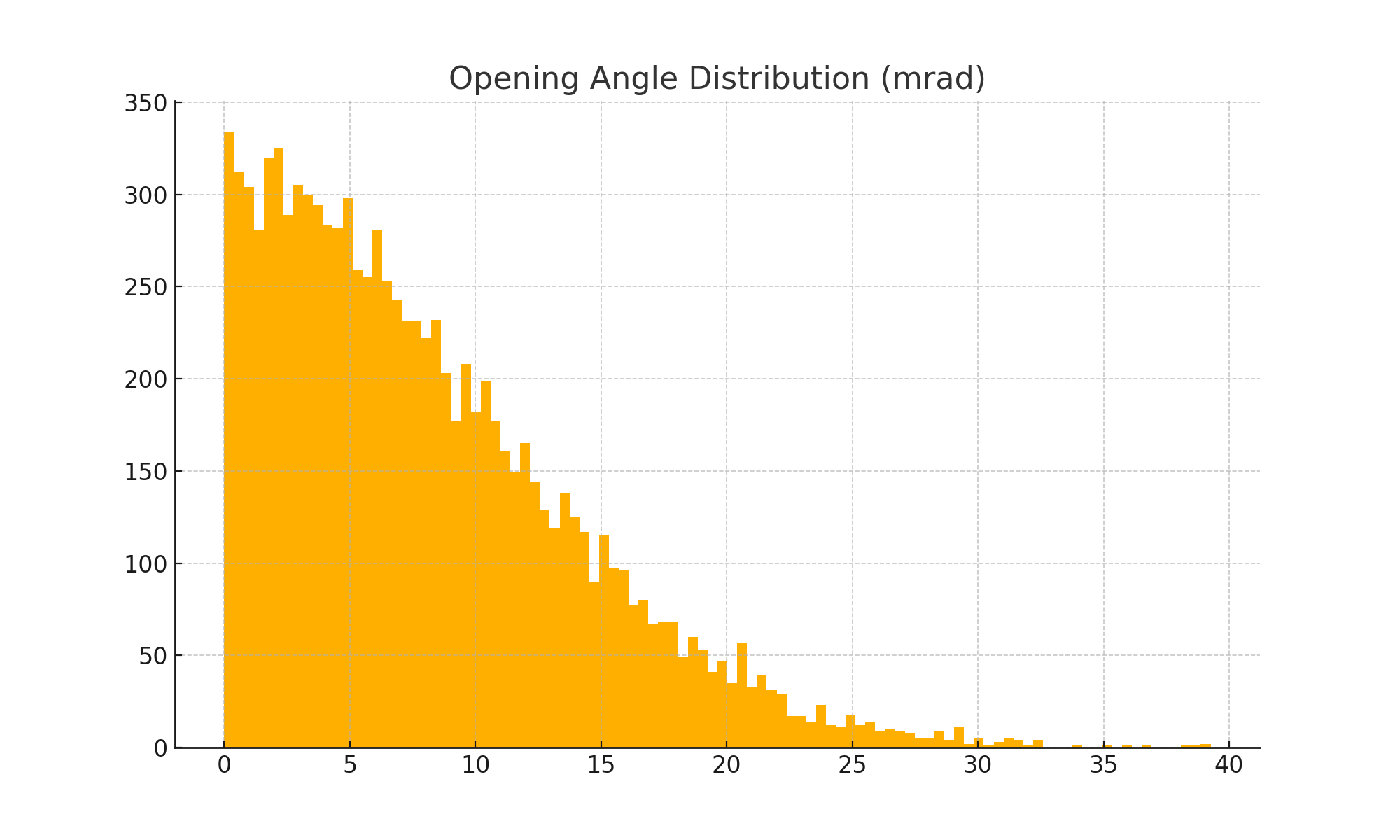


Figure 5: Opening angle distribution (mrad).

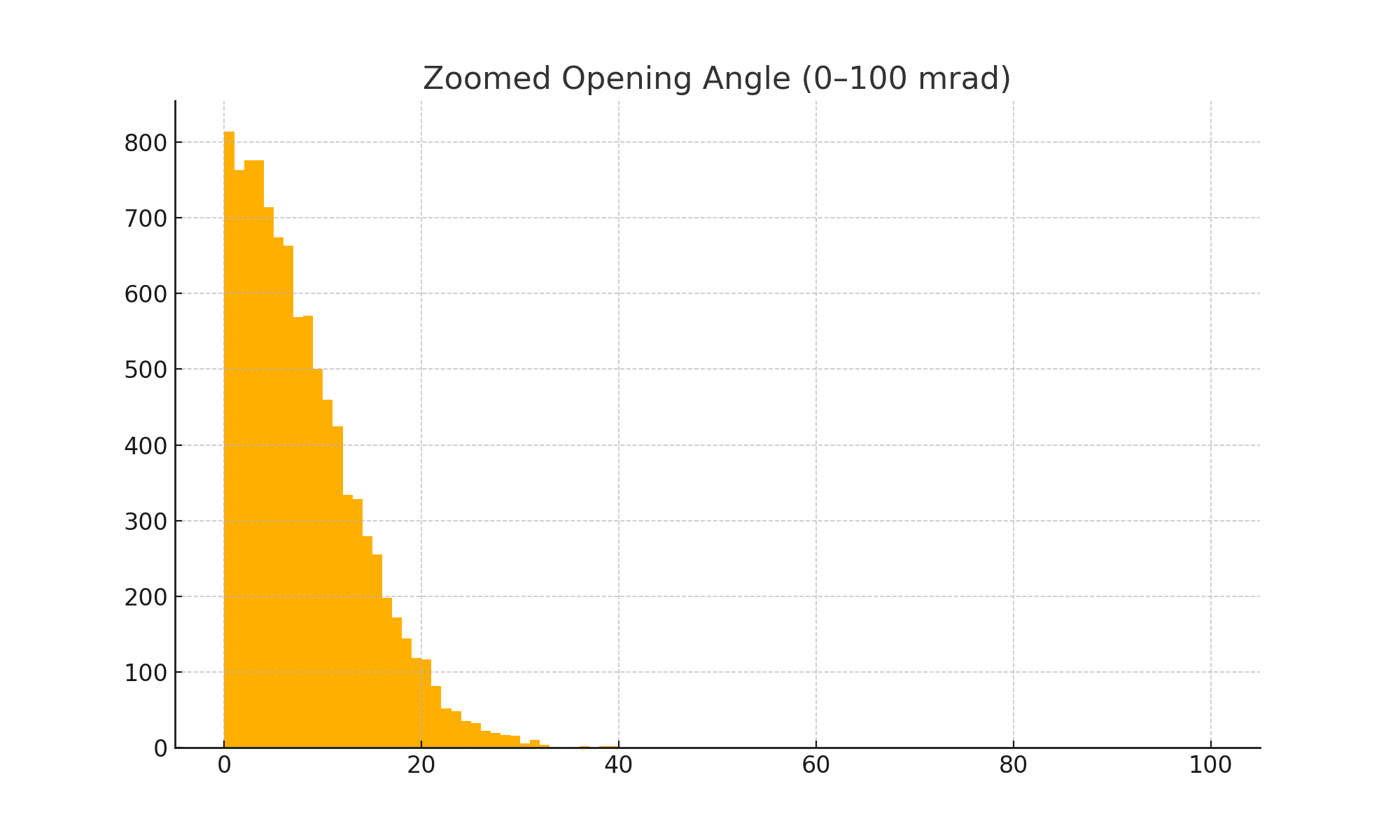


Figure 6: Zoomed opening angle (0–100 mrad).

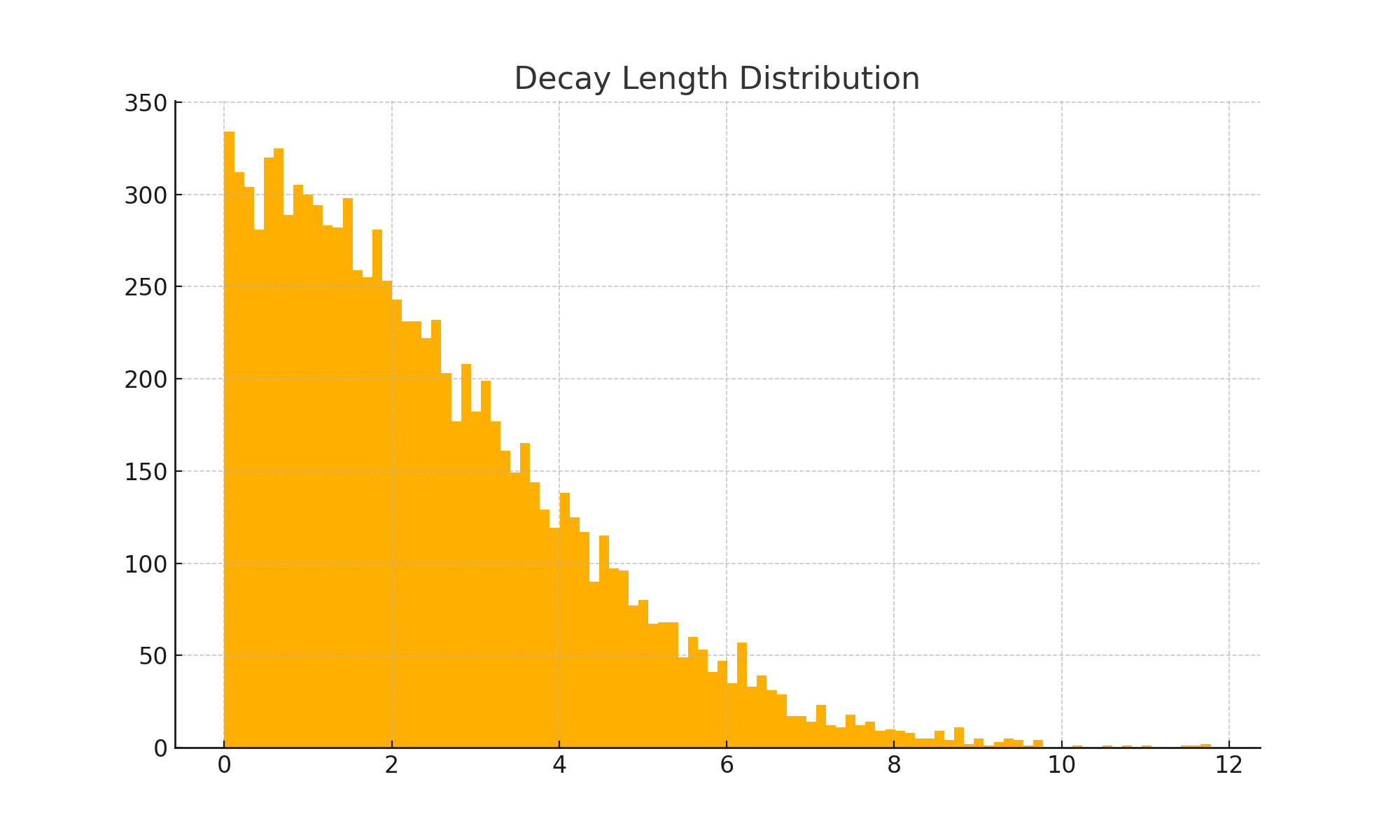


Figure 7: Distribution of decay lengths in mm.

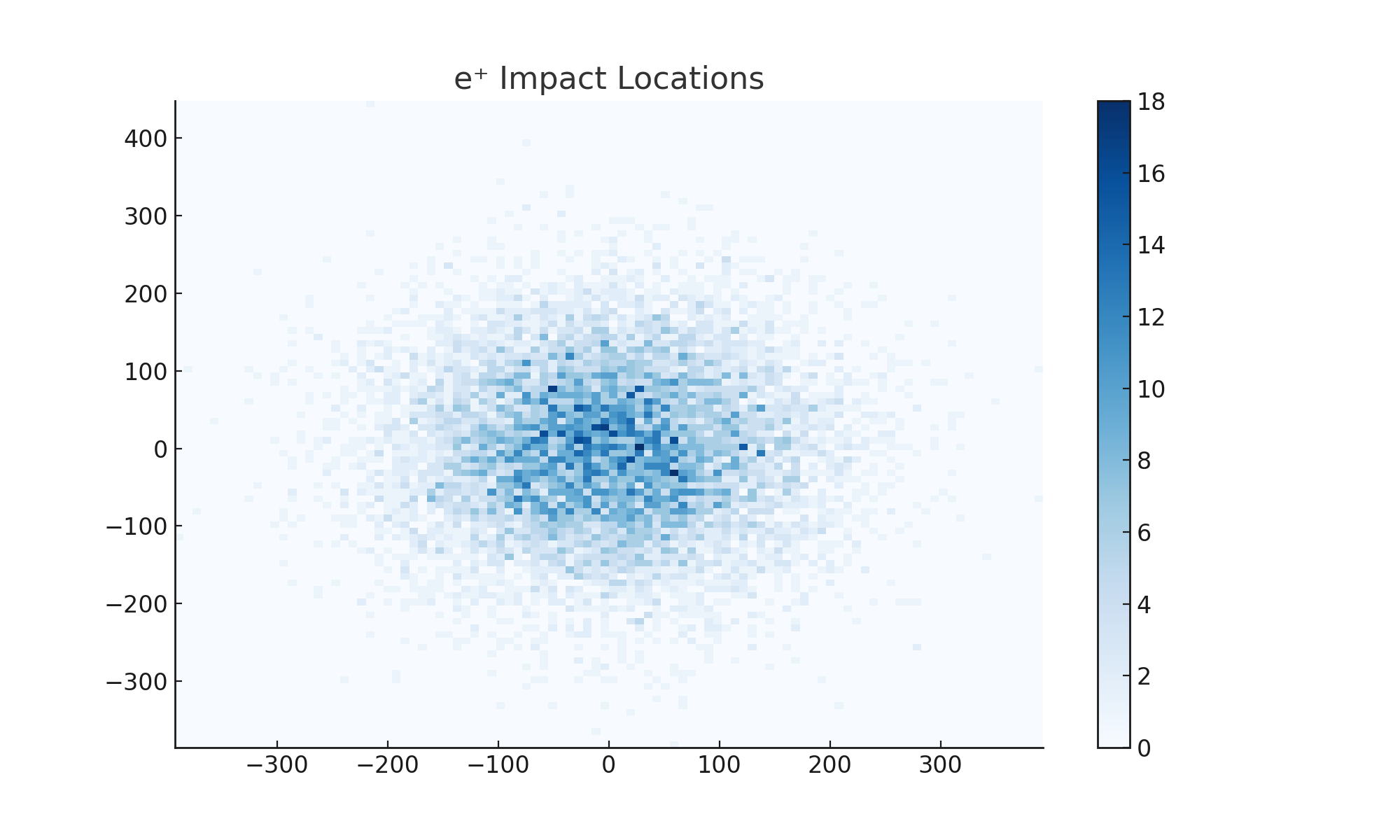


Figure 8: e⁺ impact locations at z = 0.5 m detector plane.

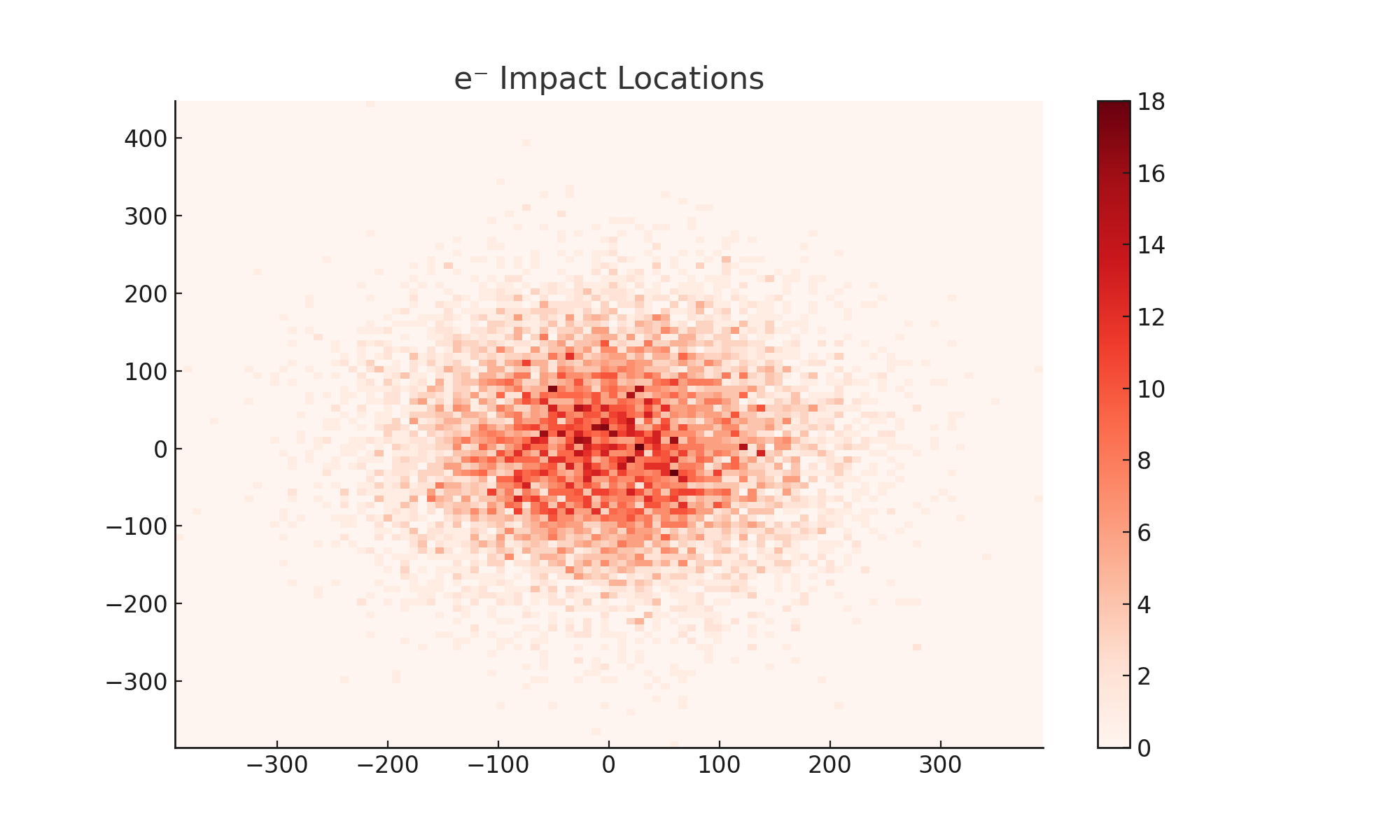


Figure 9: e⁻ impact locations at z = 0.5 m detector plane.

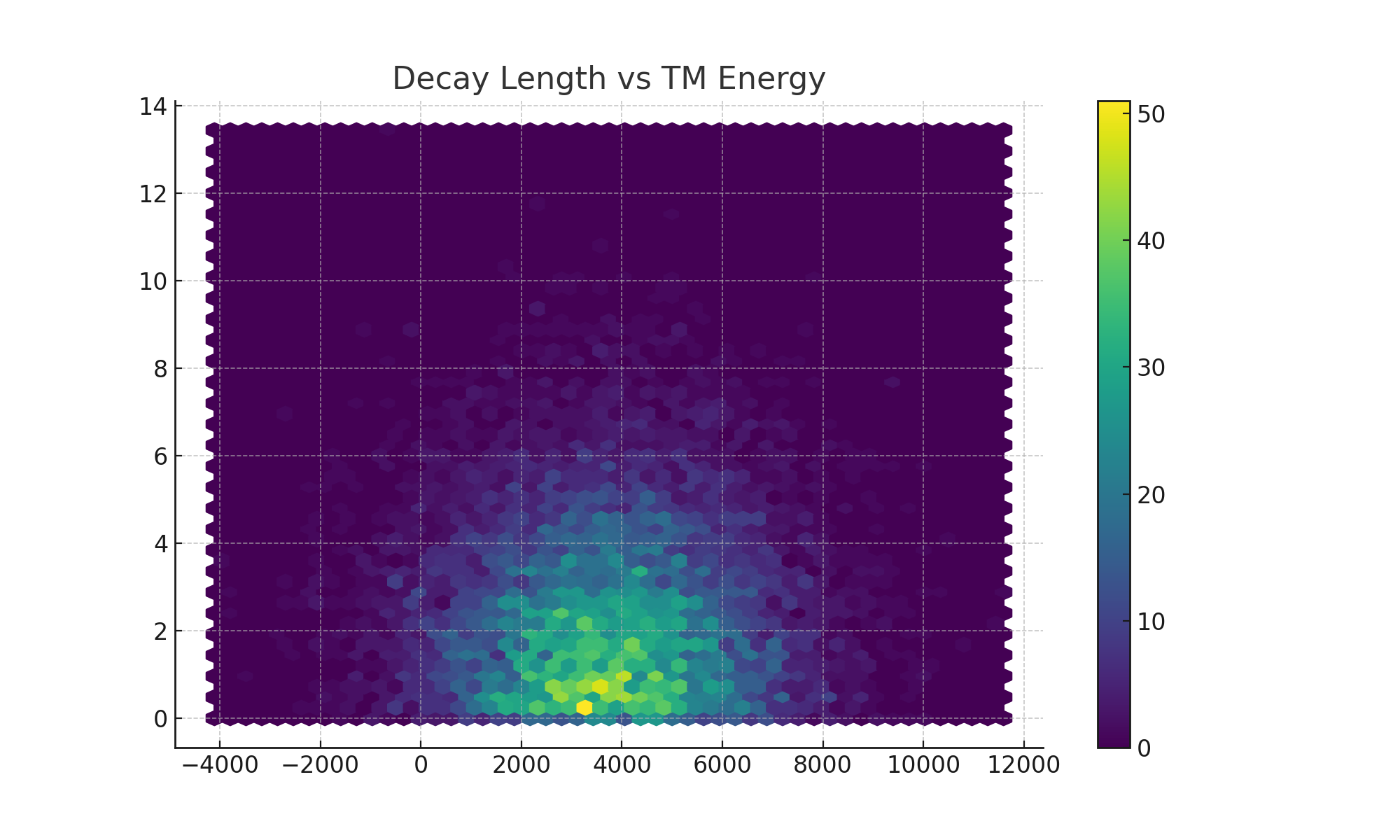


Figure 10: Correlation between TM energy and decay length.

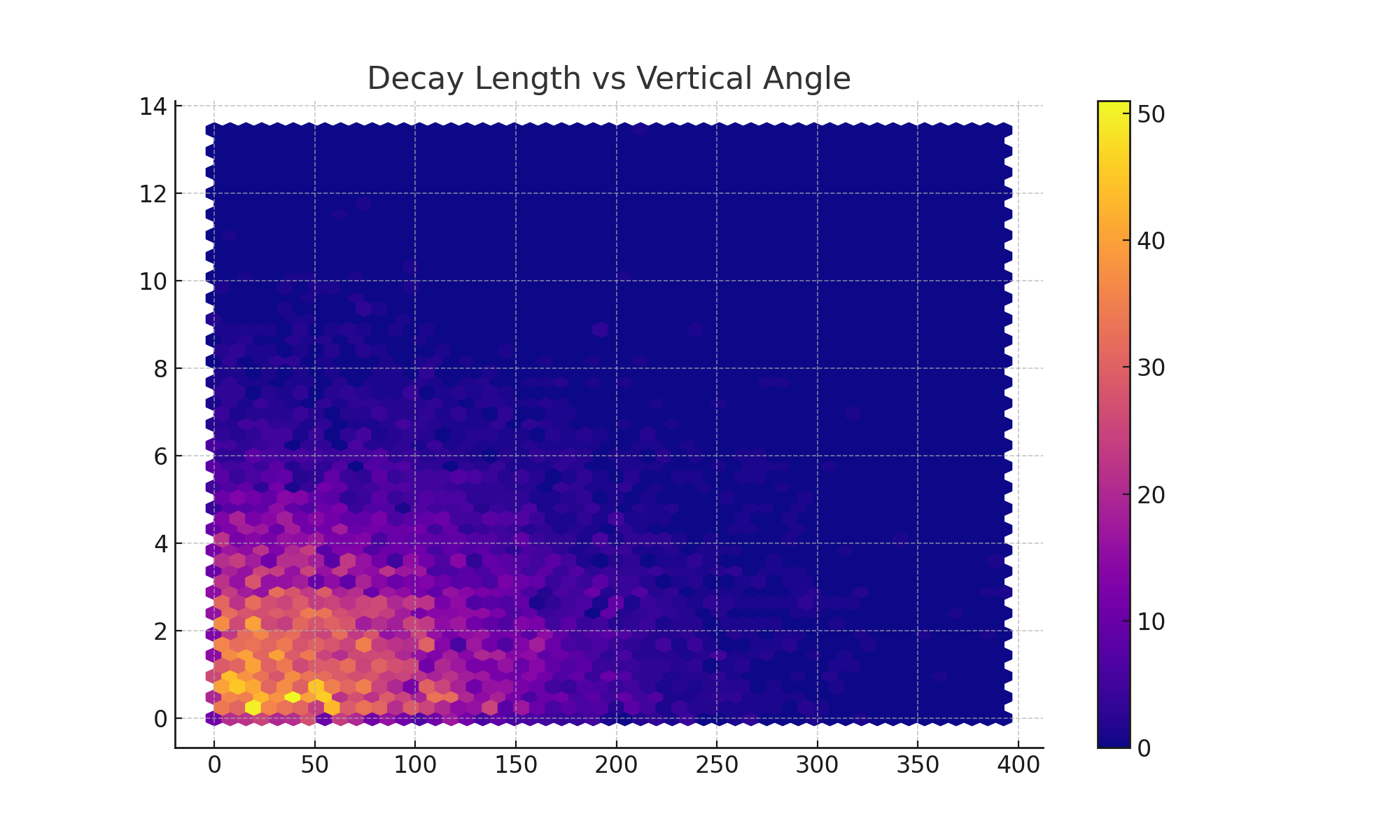


Figure 11: Correlation between e⁺ vertical angle and TM decay length.