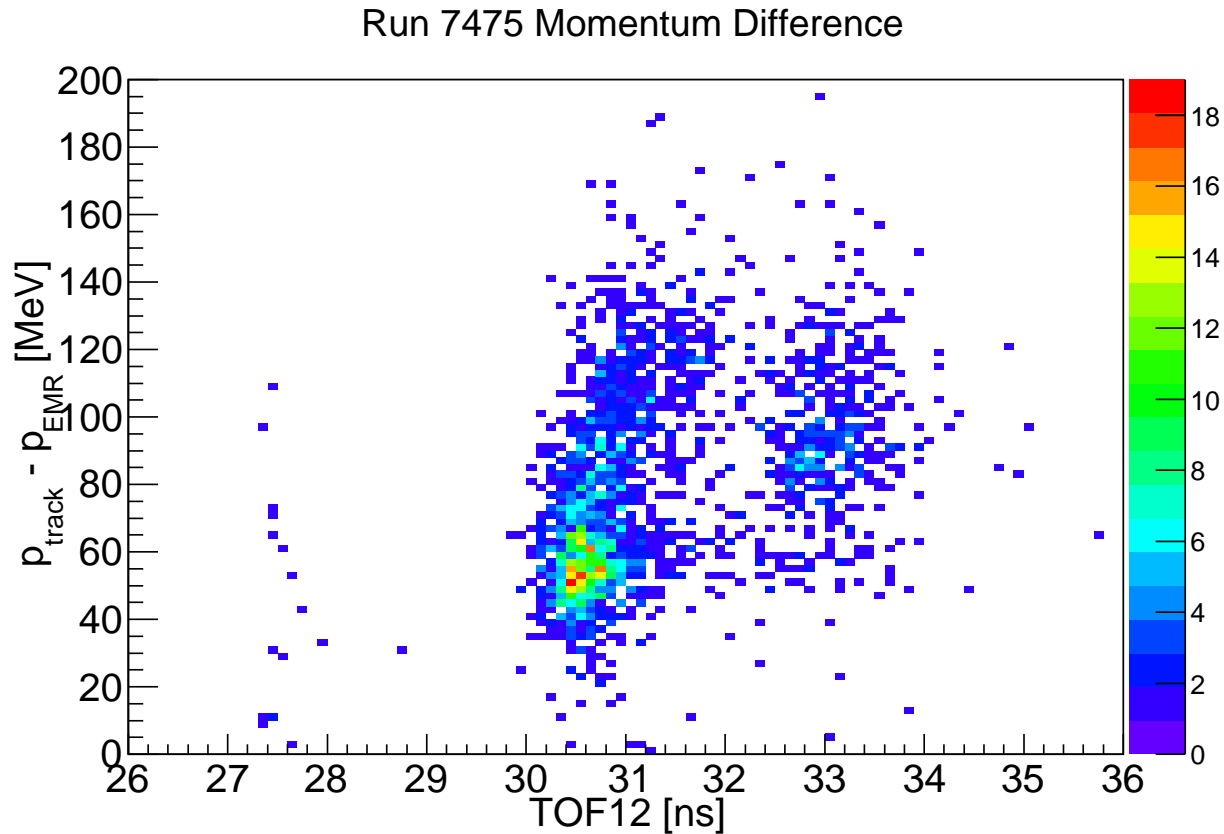


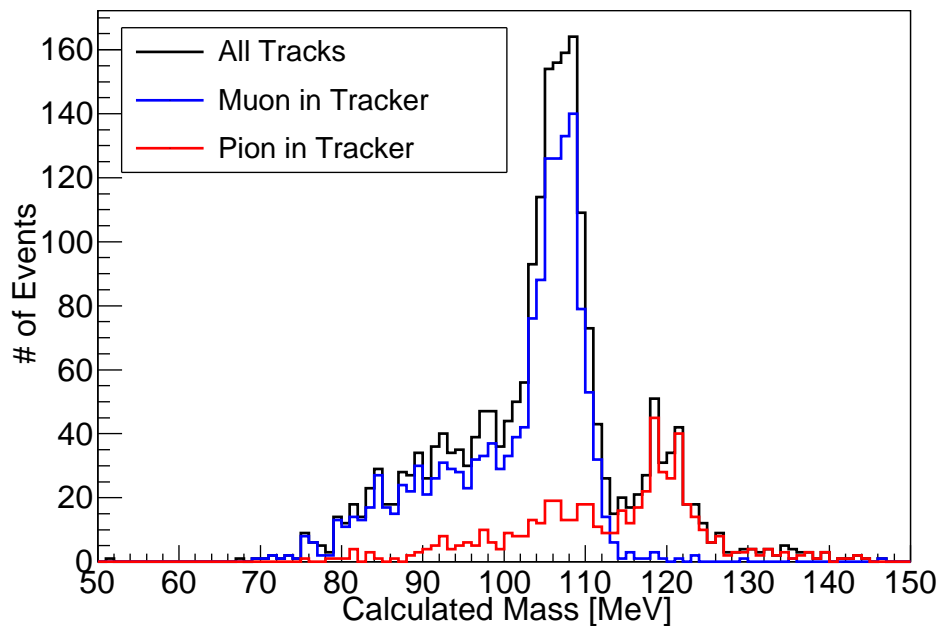
Momentum Difference Cut



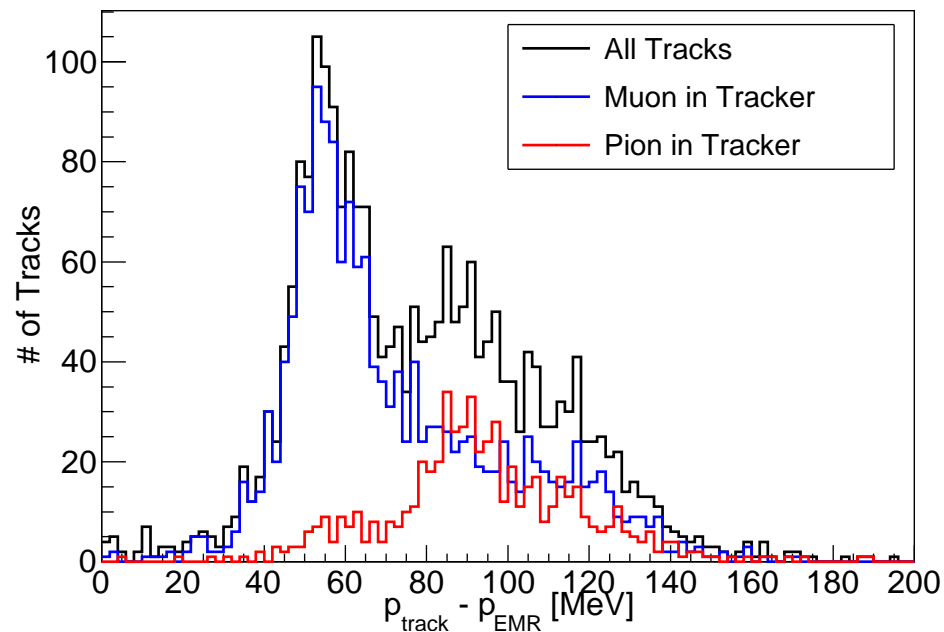
- Pions lose too much momentum in KL and EMR for good μ - π separation
- Use this: cut on $p_{\text{US}} - p_{\text{EMR}}$
- Better performance, but is it sensible?

Performance Comparison

Mass From EMR Range and TOF12



Run 7475 Momentum Difference



Downstream Algorithm	Run 7475	Run 7469
No PID	0.232	0.024
EMR m_{calc}	0.147	0.019
$p_{\text{track}} - p_{\text{EMR}}$	0.079	0.003

Out of tracks identified as DS muons, the fraction that are also identified as US pions

Major Questions

- Not well enough understood? (based on “pions lose more momentum” rather than “mass 105 or 140”)
- Does the cut change at different beam momenta?
- Does this method fail when we add an absorber?