

Layer 0 Update

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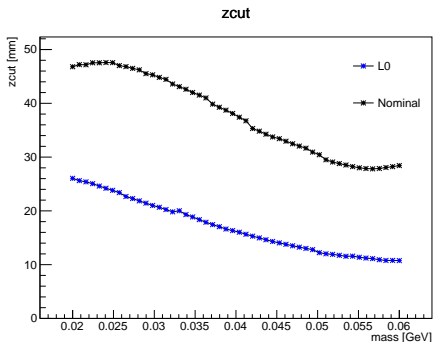
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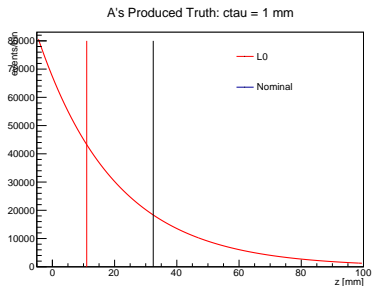
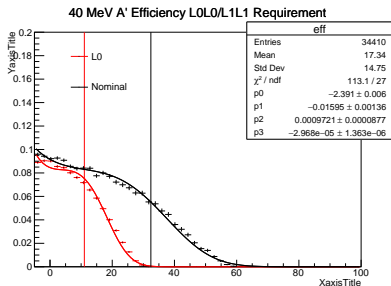
Introduction

- ▶ Another very preliminary reach results for the comparison between L0 and nominal L0L0/L1L1 requirement with intermediate plots (4 weeks at 50 nA)
- ▶ Discuss plans and issues for other layer requirements



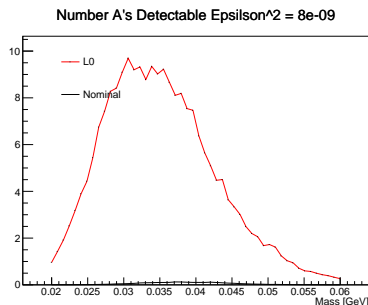
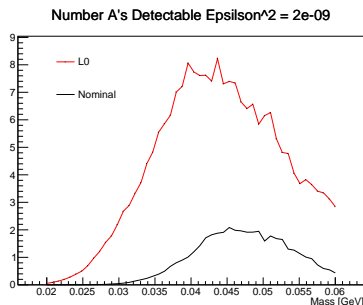
Efficiency Comparison for L0L0/L1L1 Requirement

- ▶ Requiring L0L0/L1L1 - Improved zcut in the L0 detector opens up region of significantly more A' decays



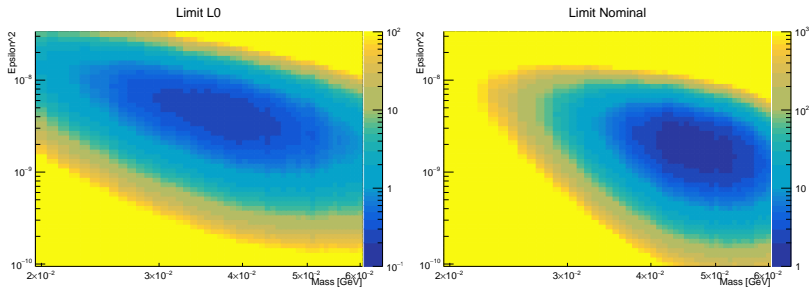
Number of Detectable A's

- ▶ Comparison of the number of detectable A's for a given value of ϵ^2



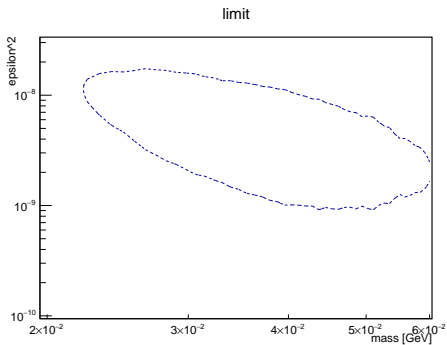
Reach Estimate

- ▶ Reach estimate. L0 on left and nominal on right. Reach is where contour = 1.



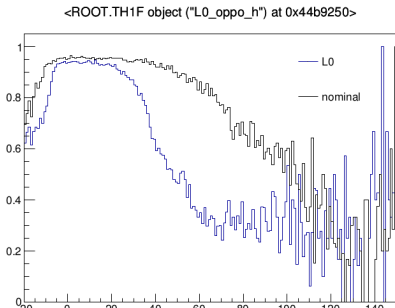
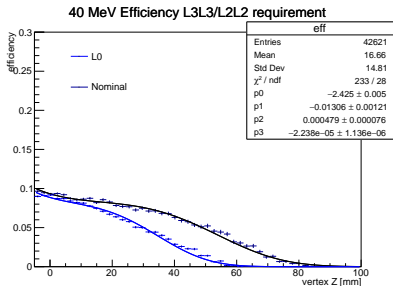
Reach Estimate

- ▶ Nominal detector has apparently no reach... L0 has decent reach



Problems in L0 Detector Efficiency for Other Layer Requirements

- ▶ Lower efficiency for L0 detector for L2L2 requirement is real
- ▶ Several cuts eliminate higher z A' events
- ▶ Possibly picking up recoil electron? Need to look at truth. Suggestions?



In the Future

- ▶ Explore using different combinations of required layer hits. L0L1, L1L1, L0L2, L2L2, L1L2, and L2L2 for L0 detector and L1L1, L1L2, and L2L2 for nominal
- ▶ Solve high z inefficiency problems in these types of requirements
- ▶ Statistics for tridents in for these requirements is not nearly enough to fit tails. Perhaps use tracking strategies to not include the first few layers. Suggestions?
- ▶ Plot σ_z vs z