Neieves model implementation in NEUT

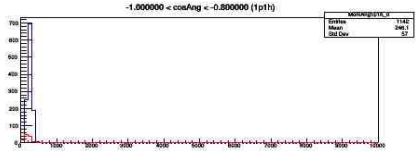
F.Sanchez

- Got a file with old NEUT and new NEUT from Hayato.
  - Official production.
- Check the different distributions to:
  - Check the implementation itself.
  - Compare to old model.
- Goal is to present a detailed comparison in Japan at the end of May.

OLD NEUT
- Relativistic Fermi Gas.
- Nucleon fermi momentum independent of radial position in the nucleus.
- No RPA.
- BBA vector form factors.

NEW NEUT
- Local Fermi Gas.
- Nucleon fermi momentum depends of radial position in the nucleus.
- RPA.
- Dipole vector form factors.
- Coulomb potential correction.

OLD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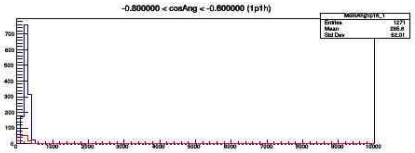
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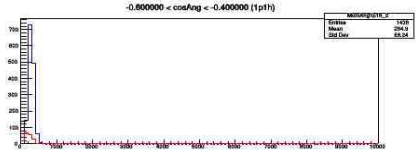
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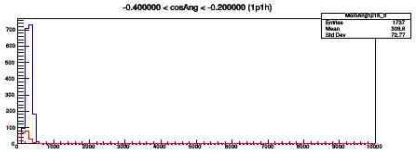
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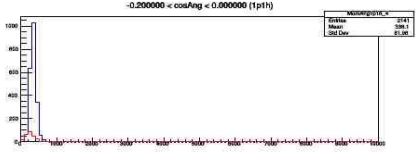
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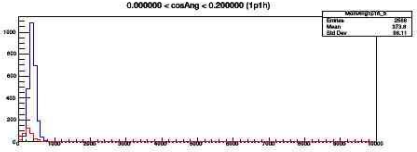
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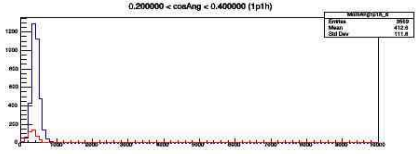
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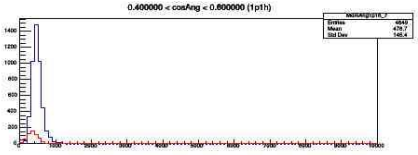
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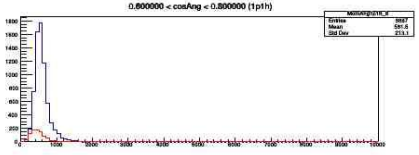
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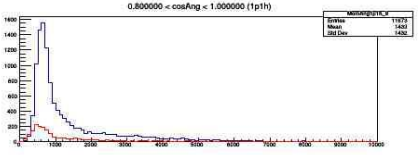
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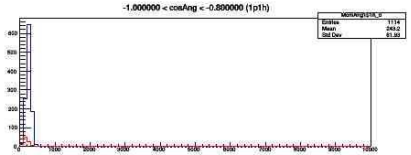
NEW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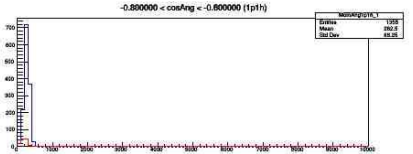
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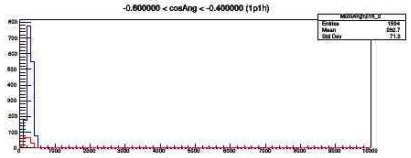
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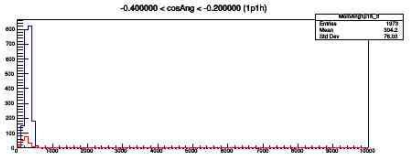
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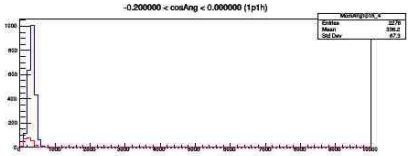
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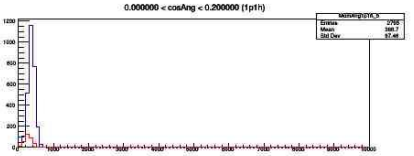
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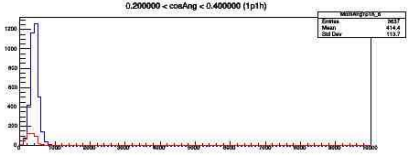
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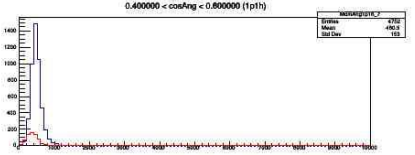
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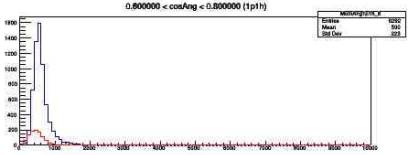
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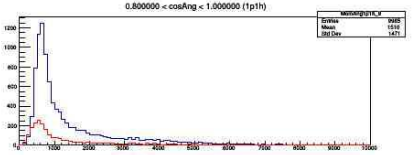
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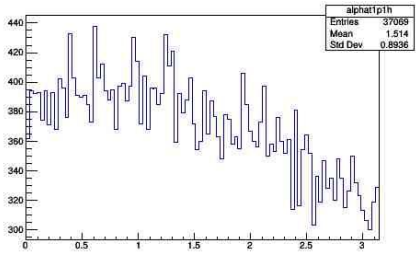
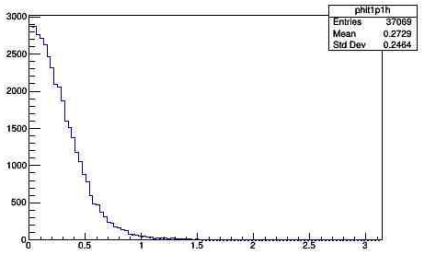
OLD


alphat1p1h
Entries 37069
Mean 1.514
Std Dev 0.8936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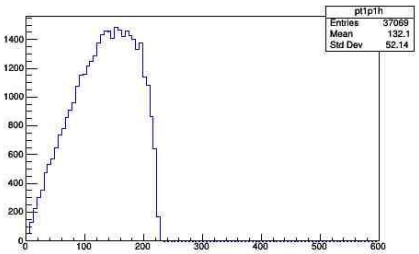
Entries 37069
Mean 0.2729
Std Dev 0.2464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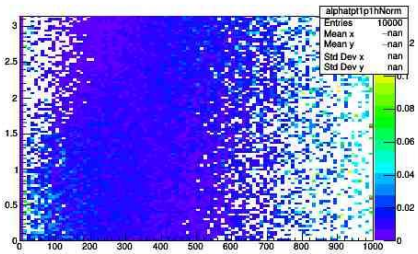
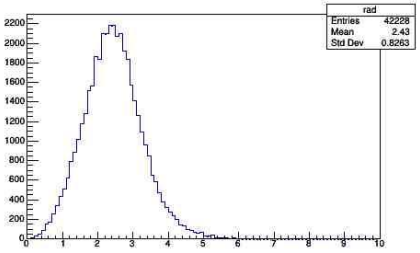
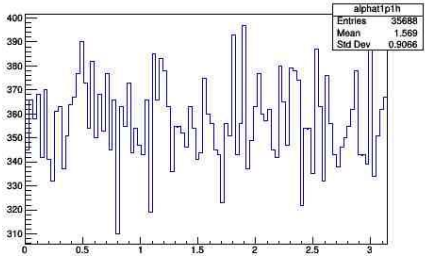
Entries 37069
Mean 132.1
Std Dev 52.14


alphatpt1p1hNorm
Entries 10000
Mean x -nan
Mean y -nan
Std Dev x nan
Std Dev y nan


rad
Entries 42228
Mean 2.43
Std Dev 0.8263

NEW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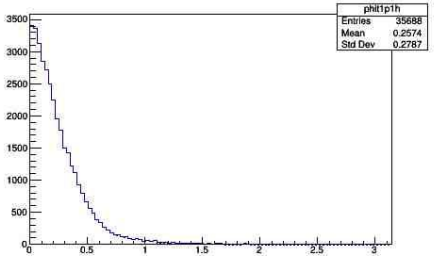
Entries 35688
Mean 1.569
Std Dev 0.9066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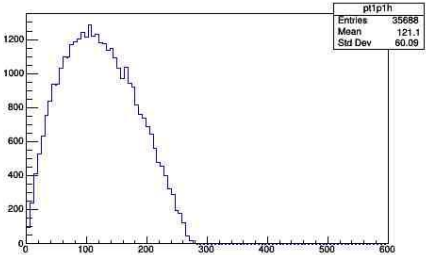
Entries 35688
Mean 0.2574
Std Dev 0.2787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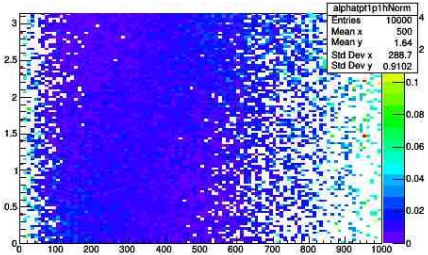
Entries 35688
Mean 121.1
Std Dev 60.09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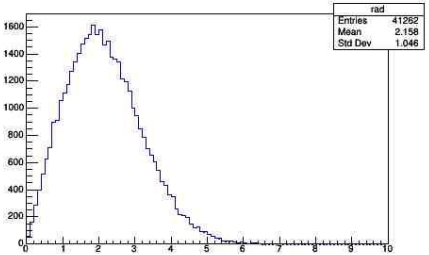
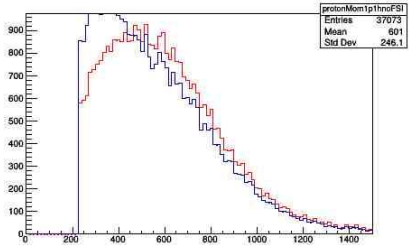
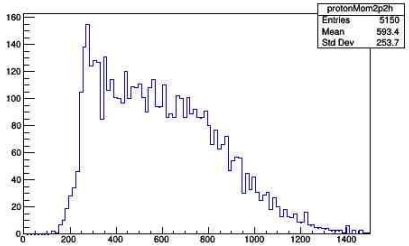
Entries 10000
Mean x 500
Mean y 1.64
Std Dev x 288.7
Std Dev y 0.9102


rad
Entries 41262
Mean 2.158
Std Dev 1.046

OLD


protonMom1p1hncFSI
Entries 37073
Mean 601
Std Dev 246.1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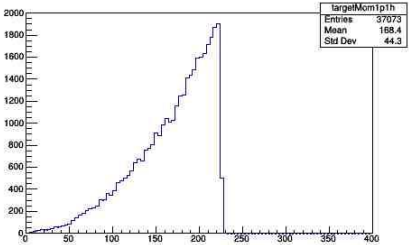
Std Dev 253.7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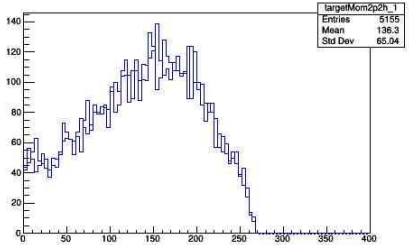
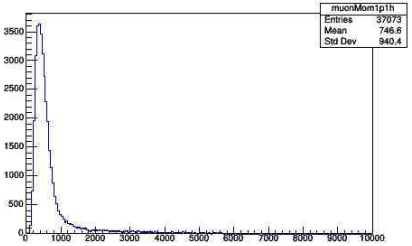
Entries 37073
Mean 168.4
Std Dev 44.3


targetMom2p2h_1
Entries 5155
Mean 136.3
Std Dev 65.04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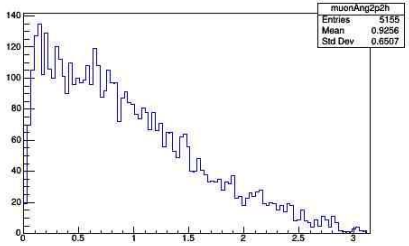
Mean 746.6
Std Dev 940.4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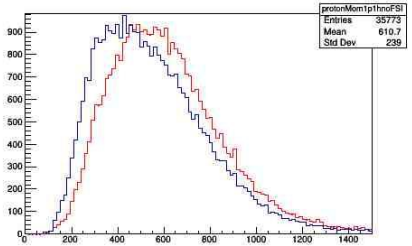
Entries 5155
Mean 0.9256
Std Dev 0.6507

NEW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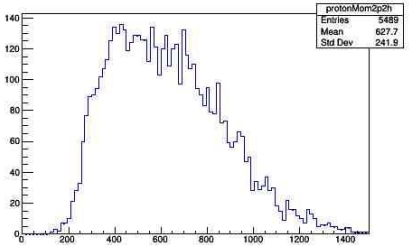
Mean 610.7
Std Dev 239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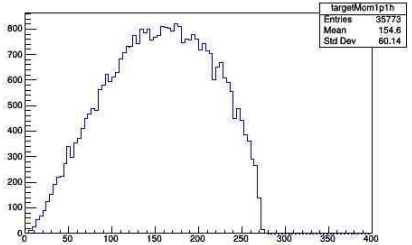
Mean 627.7
Std Dev 241.9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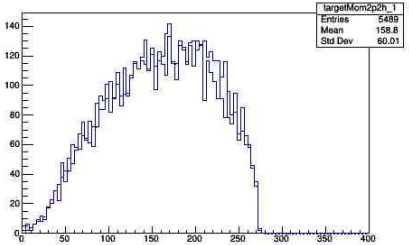
Mean 154.6
Std Dev 60.14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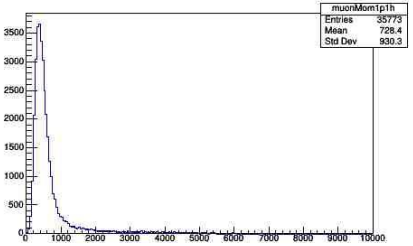
Mean 158.8
Std Dev 60.01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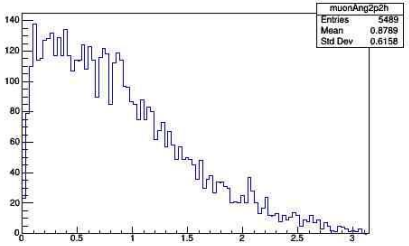
Mean 728.4
Std Dev 930.3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Mean 0.8789
Std Dev 0.6158