



Beam Paper Draft Update

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Data and MC changes

- Fixes to the MC:
 - remove non-proton secondaries being incorrectly counted
 - Momentum cut of 140 MeV (in line with data)
 - Removed top bar of S4
 - Apply deadtime weighting
- Fixes to the Data corrections:
 - Efficiency correction reworked - ongoing

S4/S3 comparison MC data comparison

Number of moderator blocks	MC simulation	$S4_{data}/S4_{data}$
0	0.0374	0.0691 ± 0.0013
1	0.0818	0.1221 ± 0.0030
2	0.1103	0.1463 ± 0.0023
3	0.0817	0.0703 ± 0.0015
4	0.0162	0.0770 ± 0.0086

- Still not agreeing well for all blocks
- Seb's changes to efficiency correction may resolve this

S3 momentum profile drawn from data

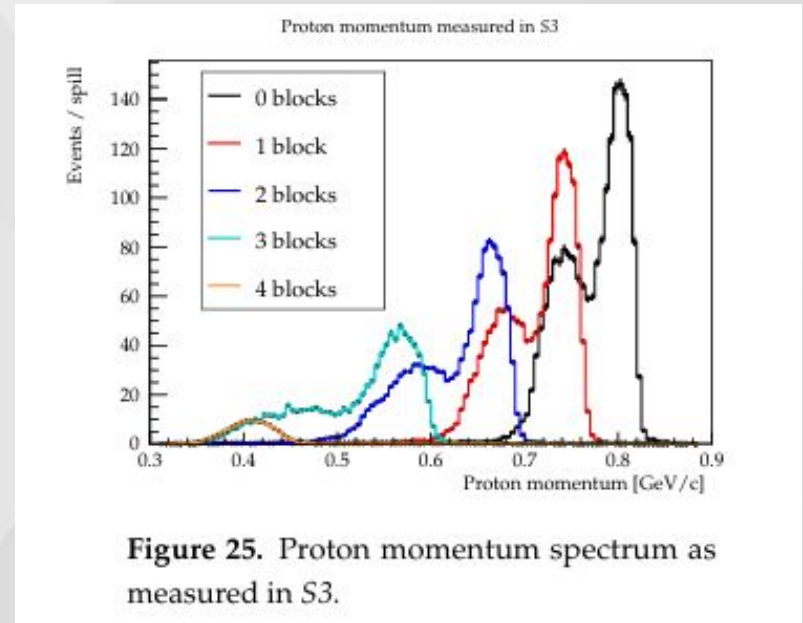
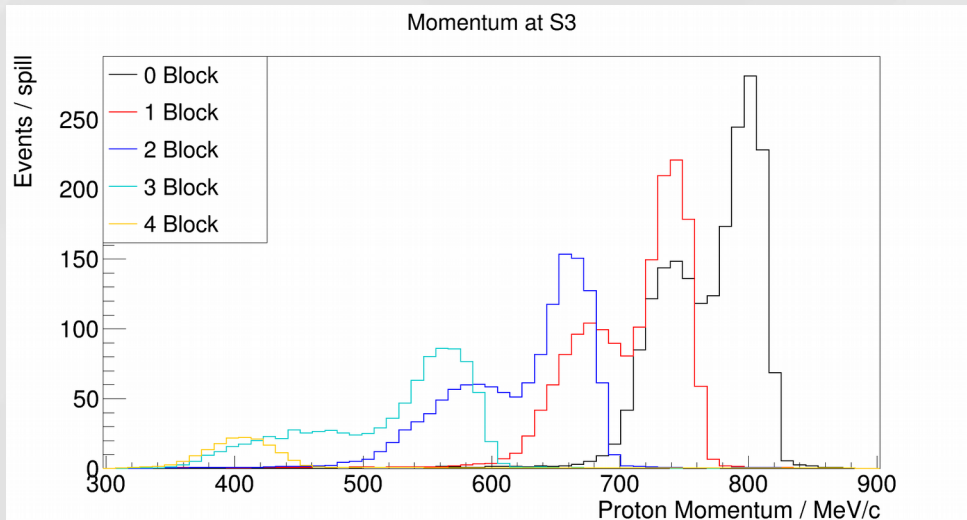
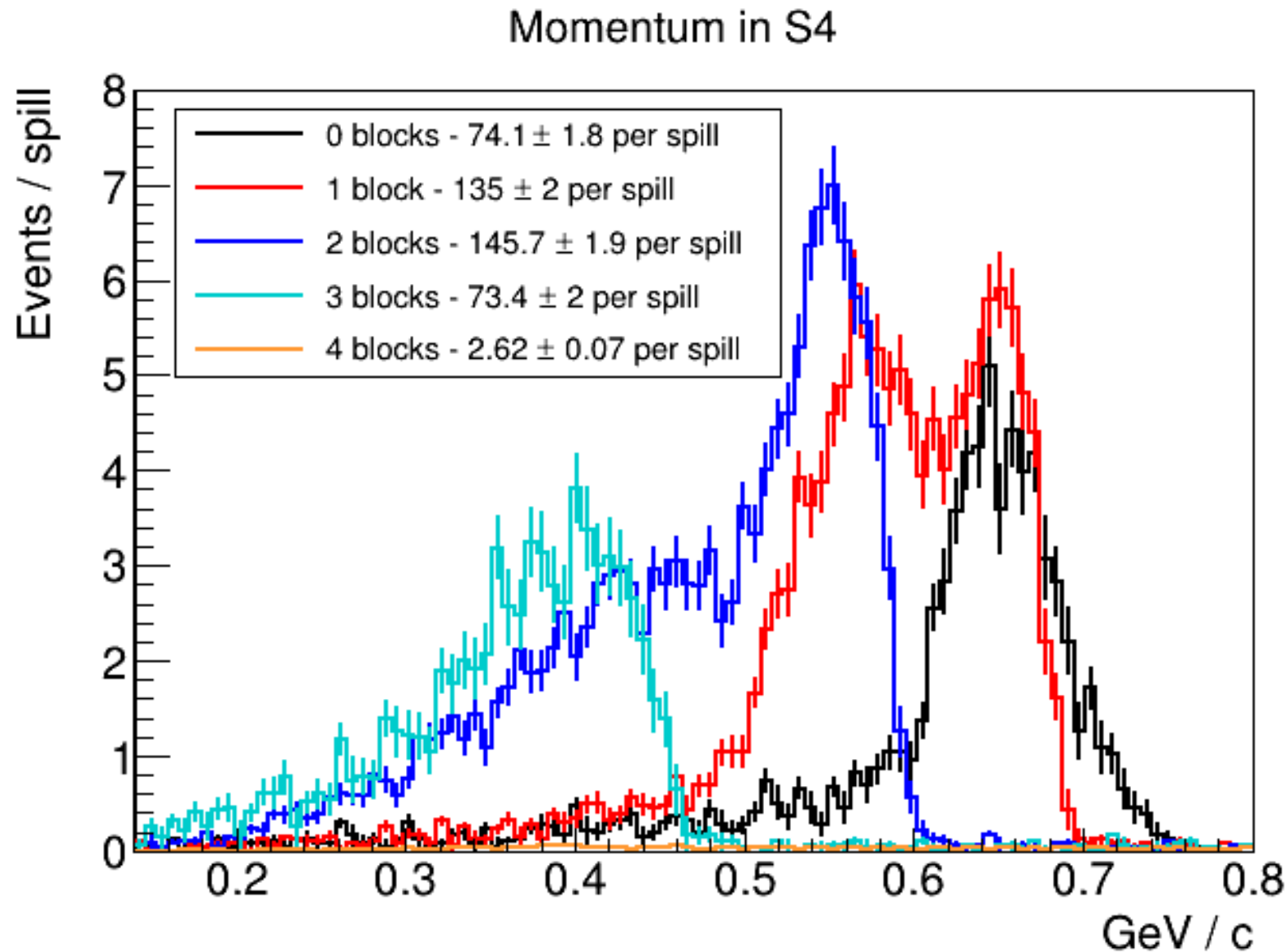
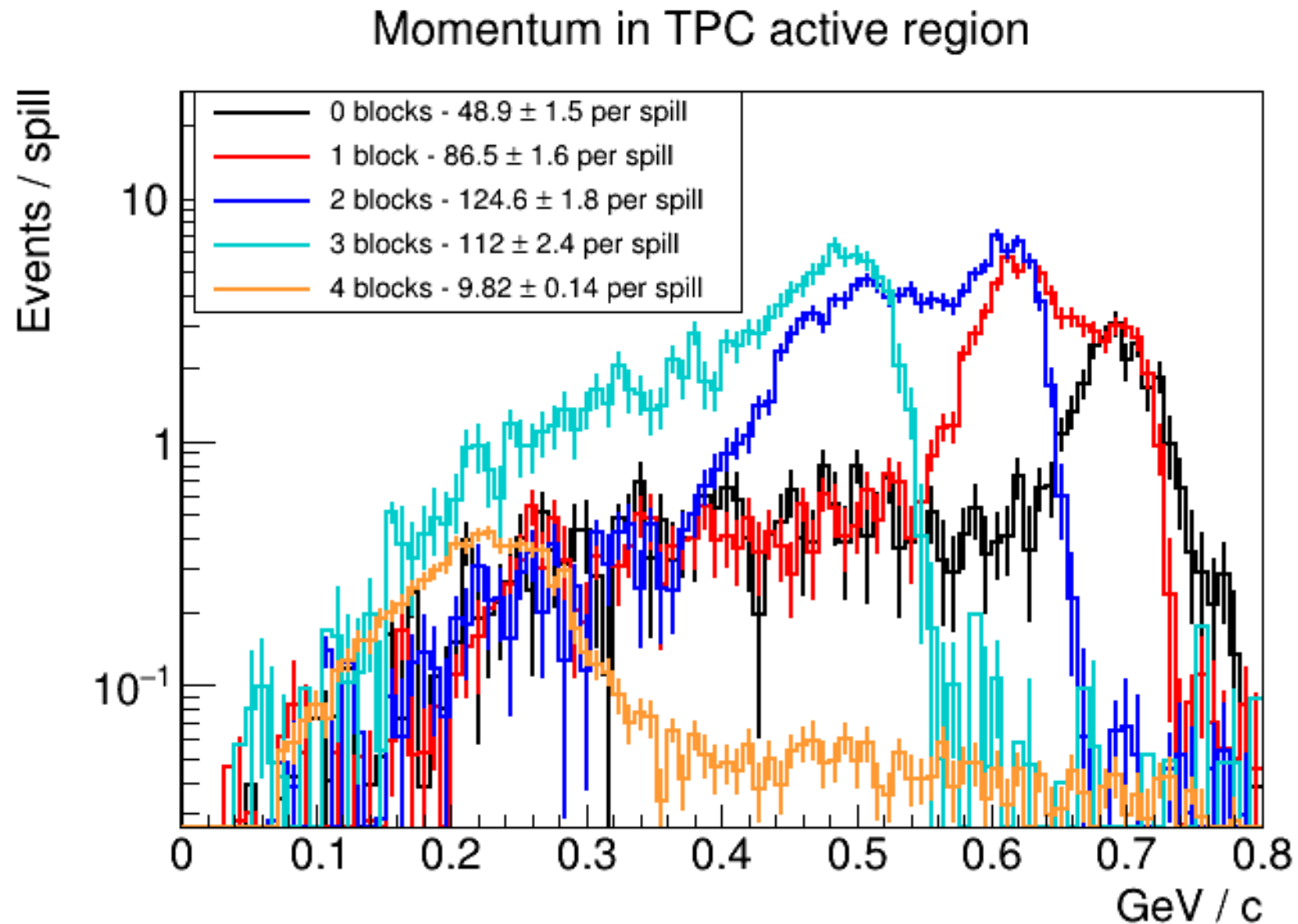


Figure 25. Proton momentum spectrum as measured in S3.

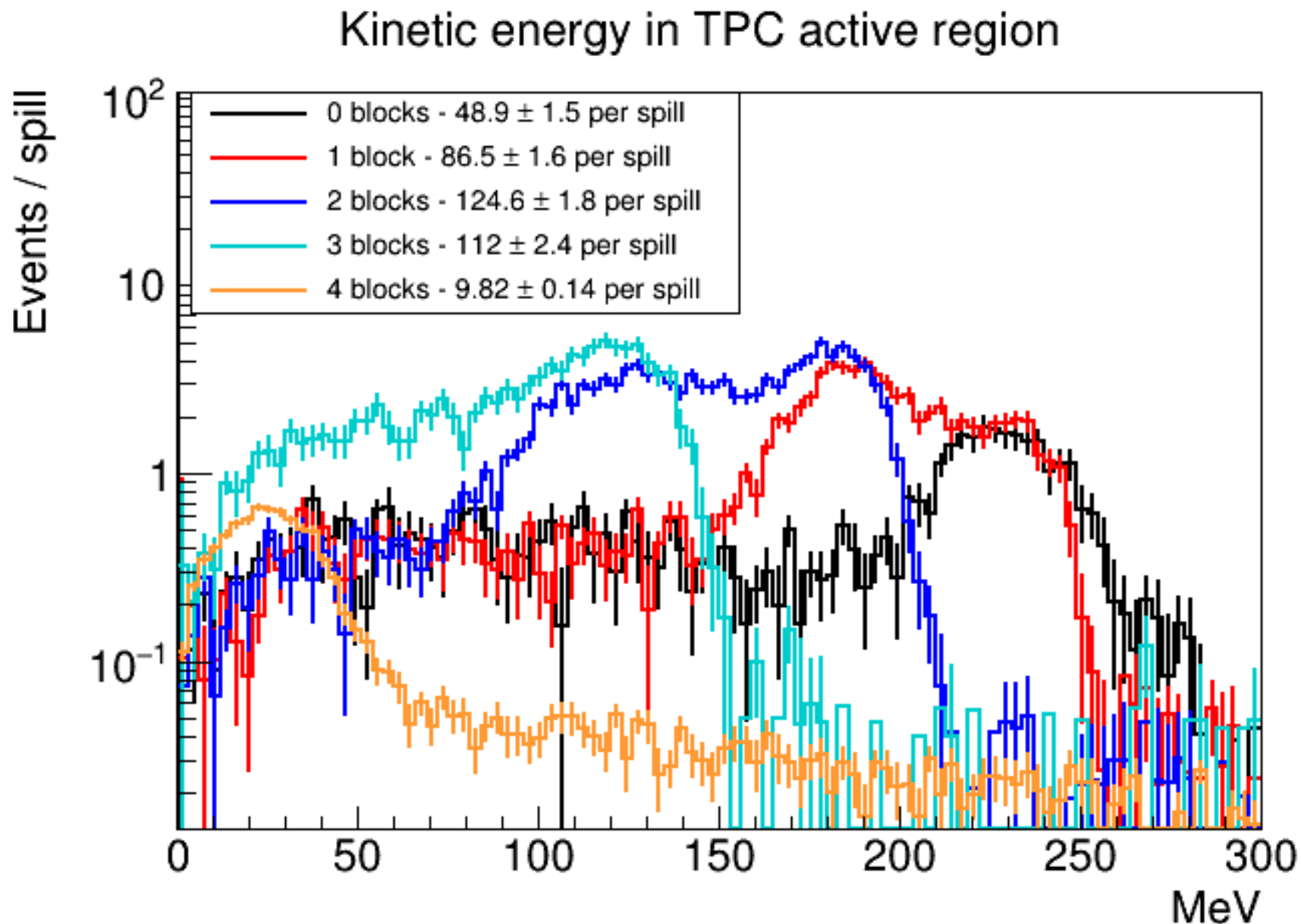
S4 momentum profile



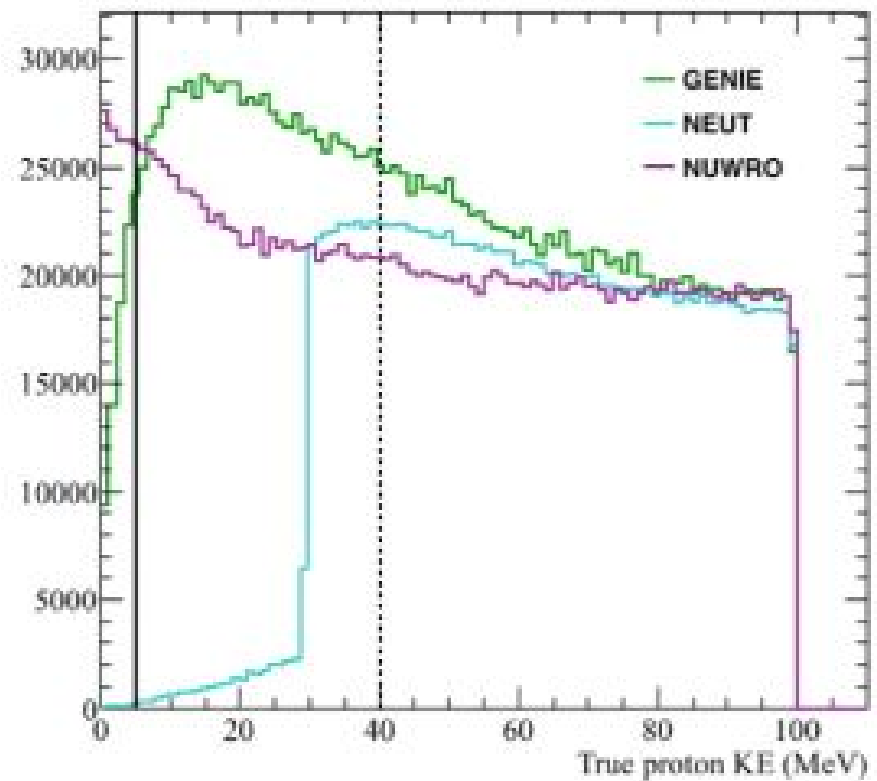
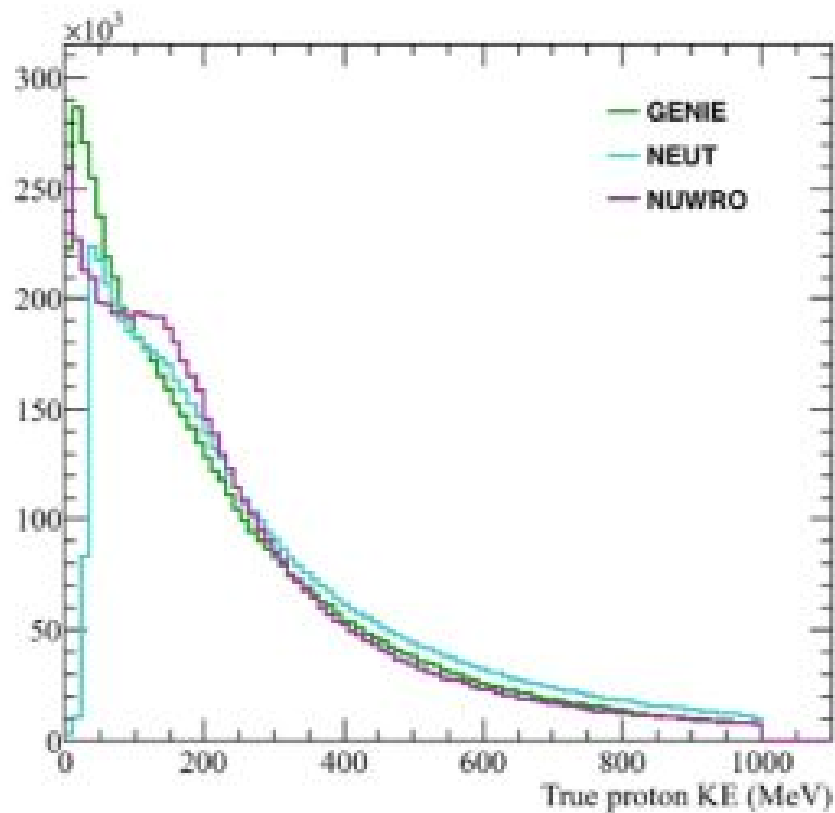
Momentum of protons in the TPC active region



KE of protons in the TPC active region



Motivation for KE region



Summary

- Still some problems with the data MC agreement – hopefully changed efficiency correction will help
- The MC plots show 4 moderator blocks were required to access low KE region wanted
- Per spill proton numbers available
- Paper now ready for comments round