

Imperial College
London



Beam Flux paper and proton number update

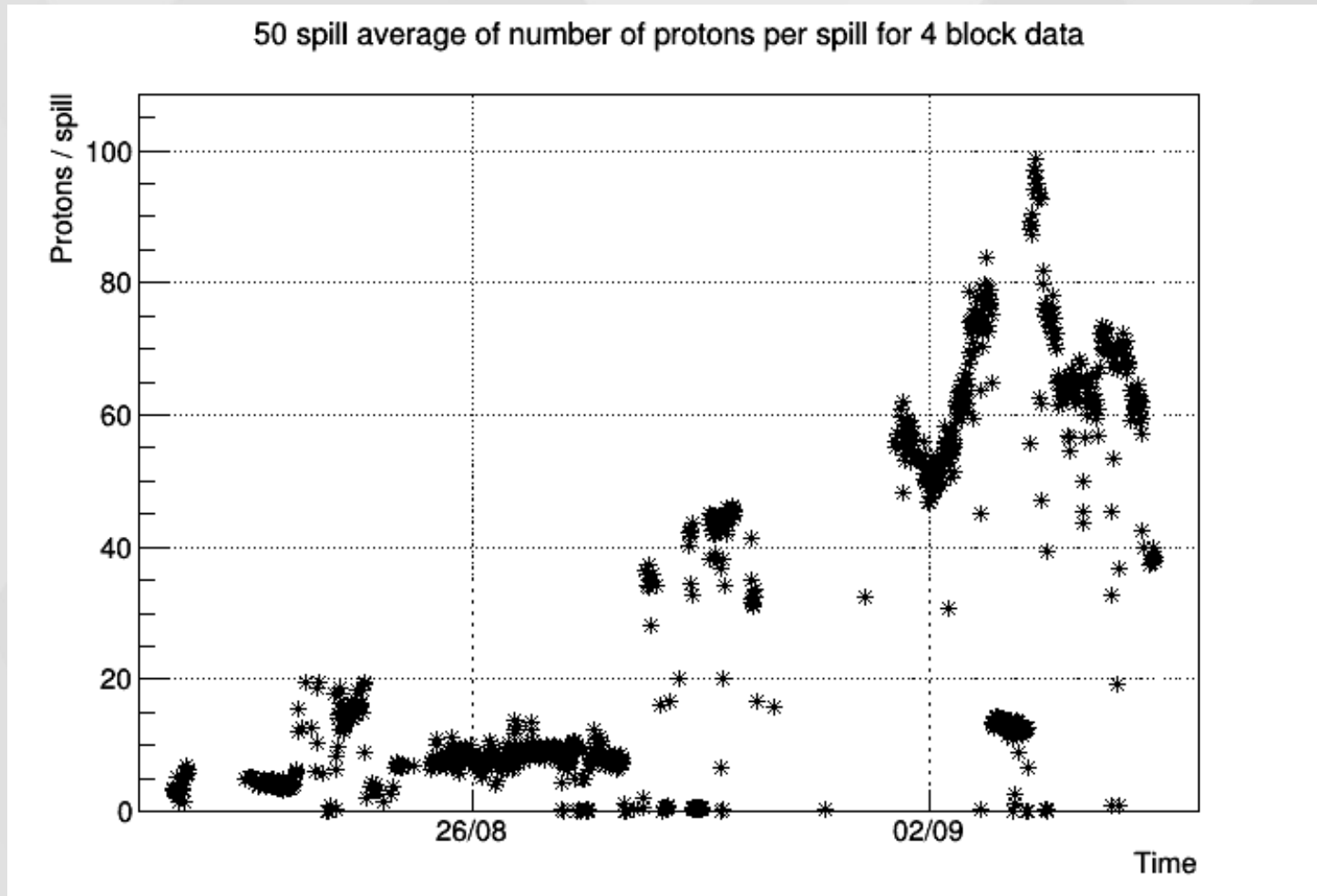
Toby Nonnenmacher, Seb Jones

HPTPC Meeting 12/04/19

Status of the paper

- Latest version of paper uploaded to General
- Implemented many comments from various people – thank you!
- Next steps:
 - Need to decide which corrections to apply to the plots (ie. deadtime correction [see previous talk], flux angle correction (in a table at the end), DTOF efficiency correction)
 - Are we happy with the plots in there, does Alexander K or anyone else want any others in as well?
 - Will need to discuss Conclusions and Abstract

Protons per spill reaching S3

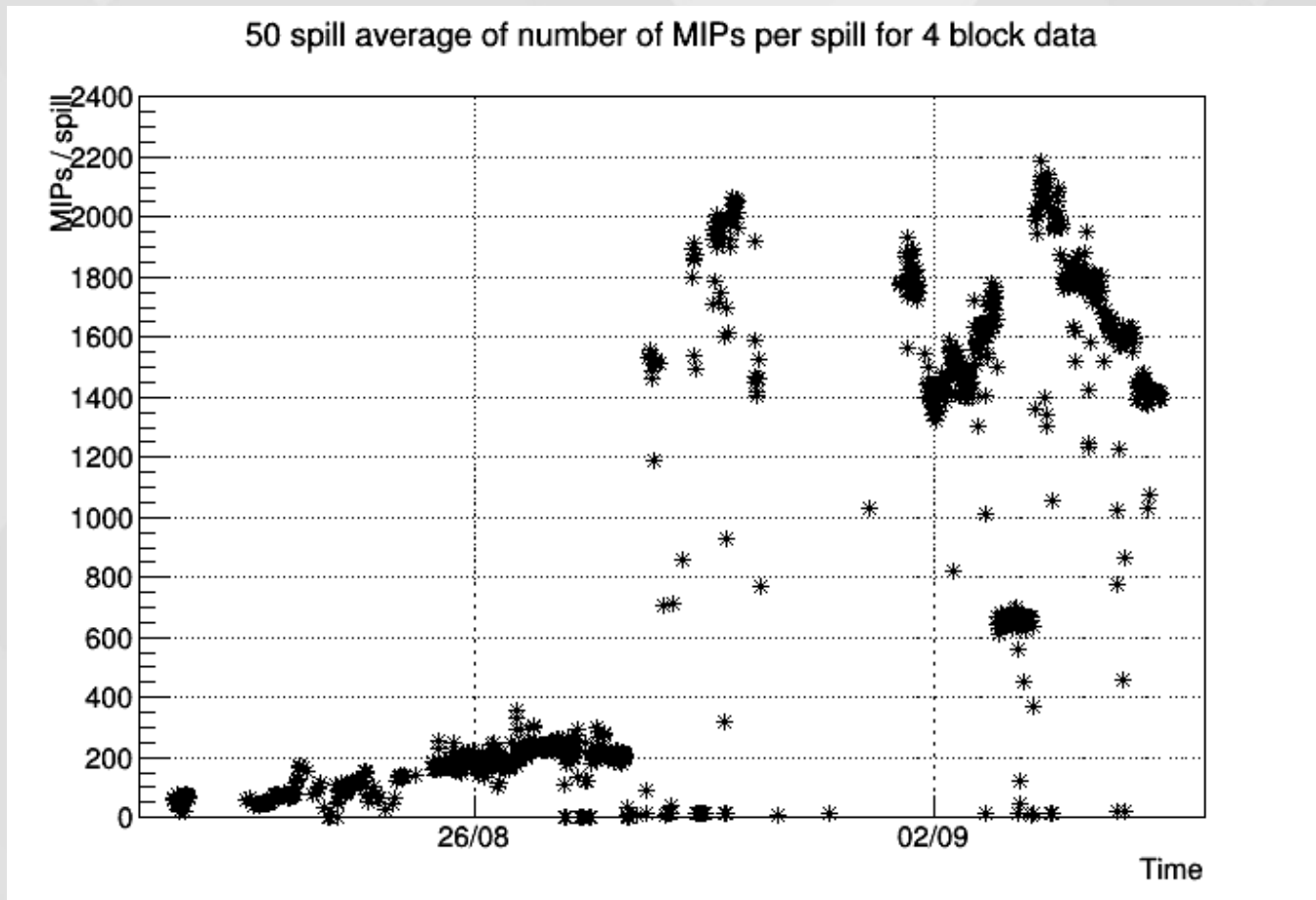


4 block data, without electron target

Between 0.3 and 0.5 are in line to reach the TPC area

HOWEVER, this is with no deadtime correction (numbers could increase by a factor of 10 – see Seb's slides)

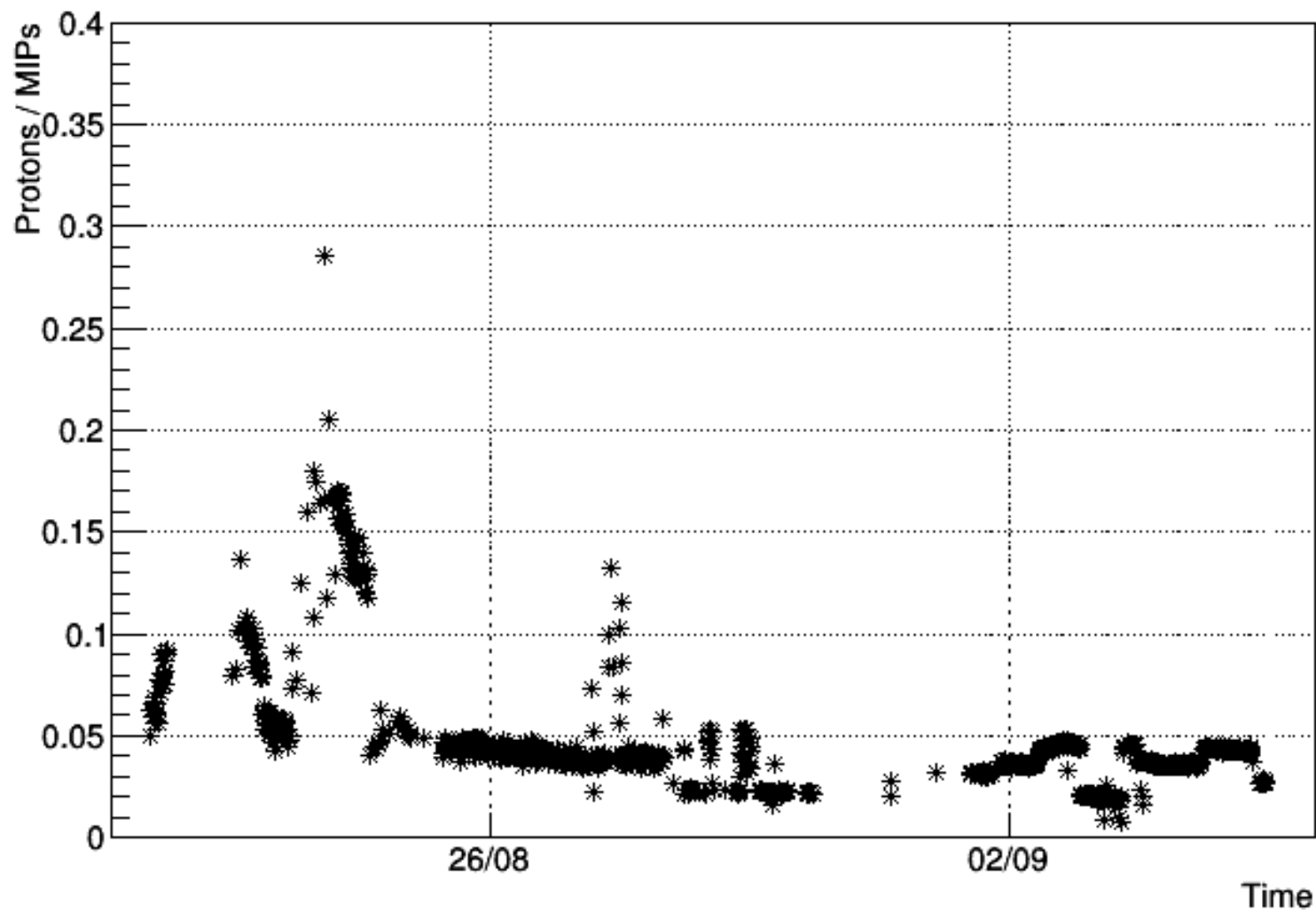
MIPs per spill reaching S3



4 block data, without electron target
Between 0.3 and 0.5 are in line to reach the TPC area
HOWEVER, this is with no deadtime correction (numbers could increase by a factor of 10 – see Seb's slides)

Ratio

50 spill average of number of proton/MIP ratio for 4 block data



Proton Momentum S3

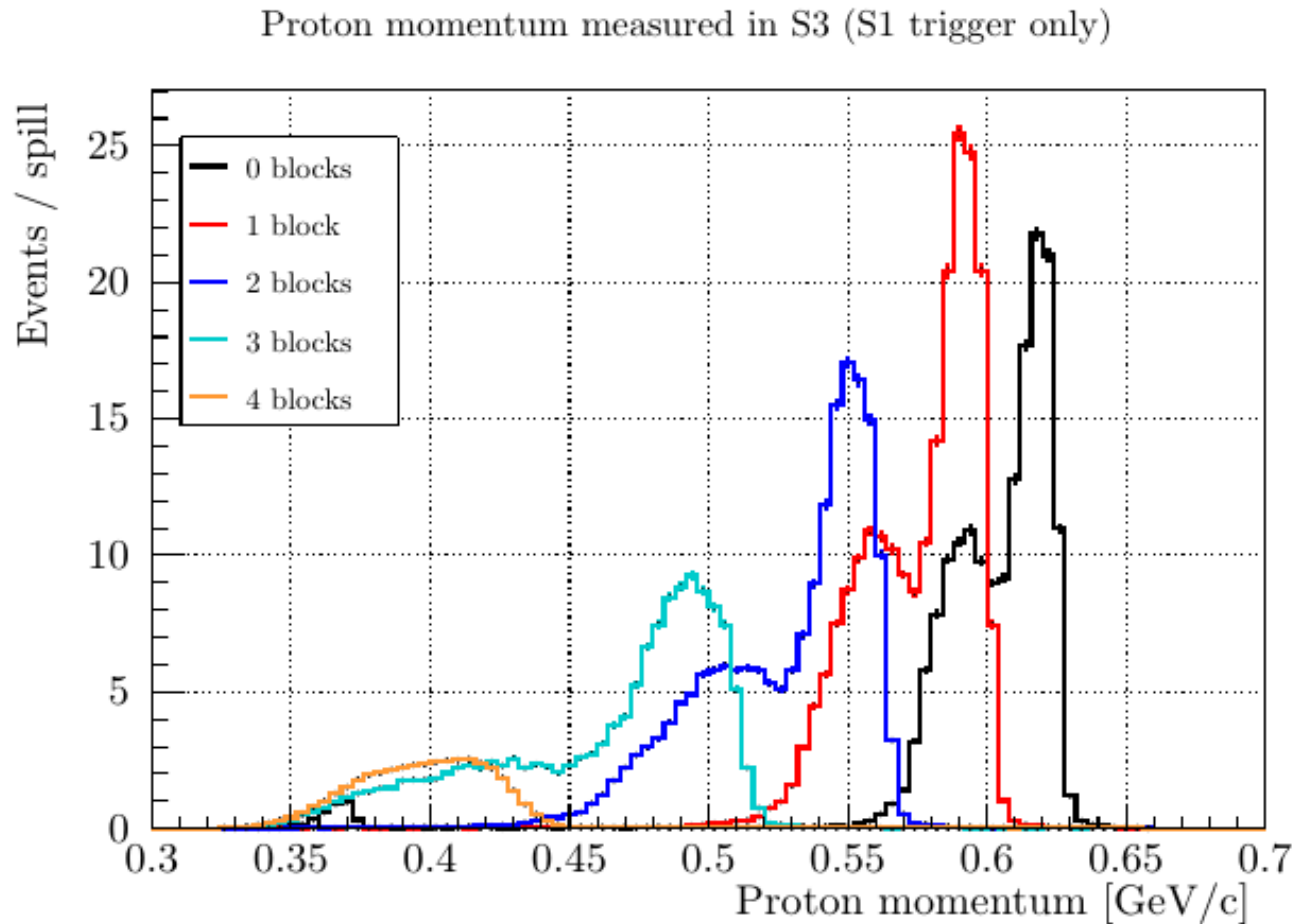
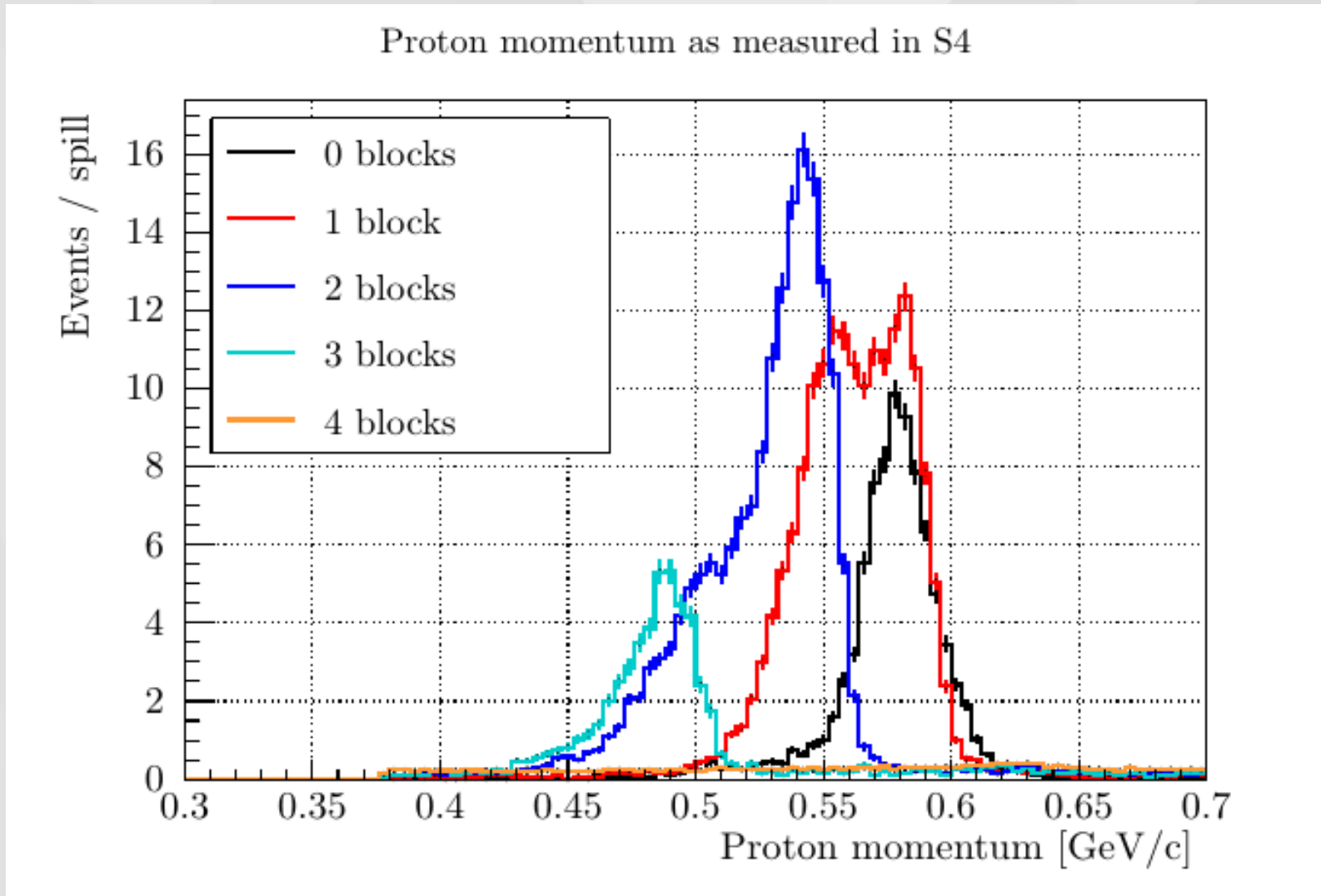


Figure 18: Proton momentum spectrum as measured in *S3*.

Limited data set – paper data

Proton Momentum S4



Limited data set – paper data

Summary

- Proton numbers per spill going through S3 appear to be a lot higher than expected
- With a deadtime correction, the number of protons per spill through S3 was between approx 70-800
- Not all of these in direction of TPC region
- Looks like momentum too low to get through steel walls
- Will return to MC to perform a proper study, throwing from the momentum distribution we have