



Istituto Nazionale
di Fisica Nucleare



RPC & TOF overlap for efficiency correction

A. Scordo, LNF (INFN)

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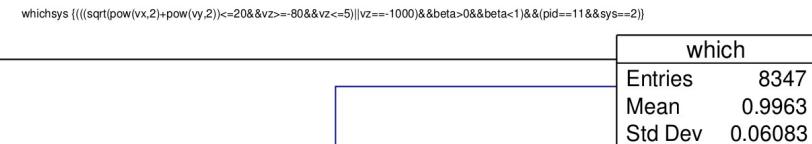
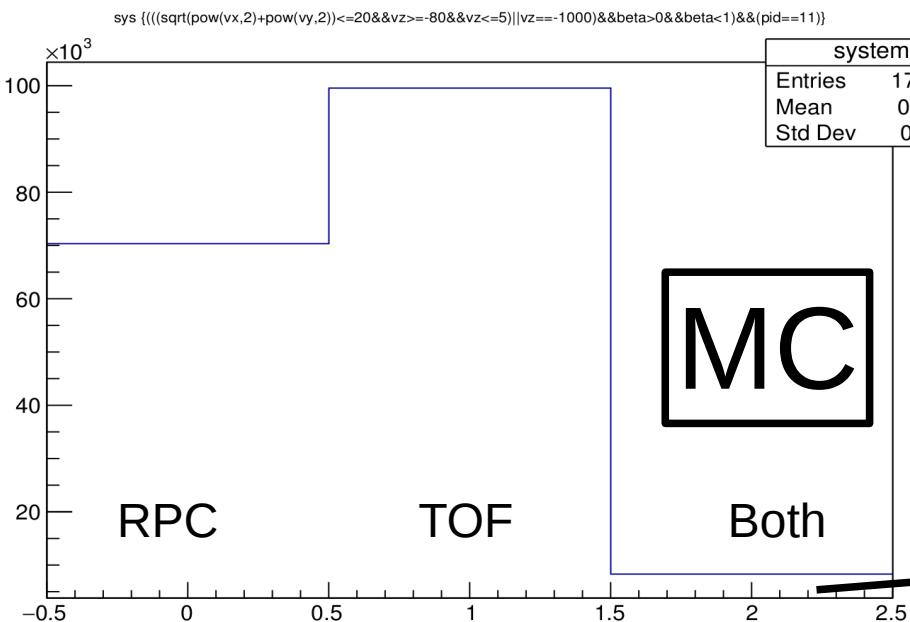
Contents

RPC VS TOF number of events (MC & Exp)
RPC VS TOF noev when SYS=2 (MC & Exp)
RPC / TOF θ separation for K+ & K- (MC & Exp)

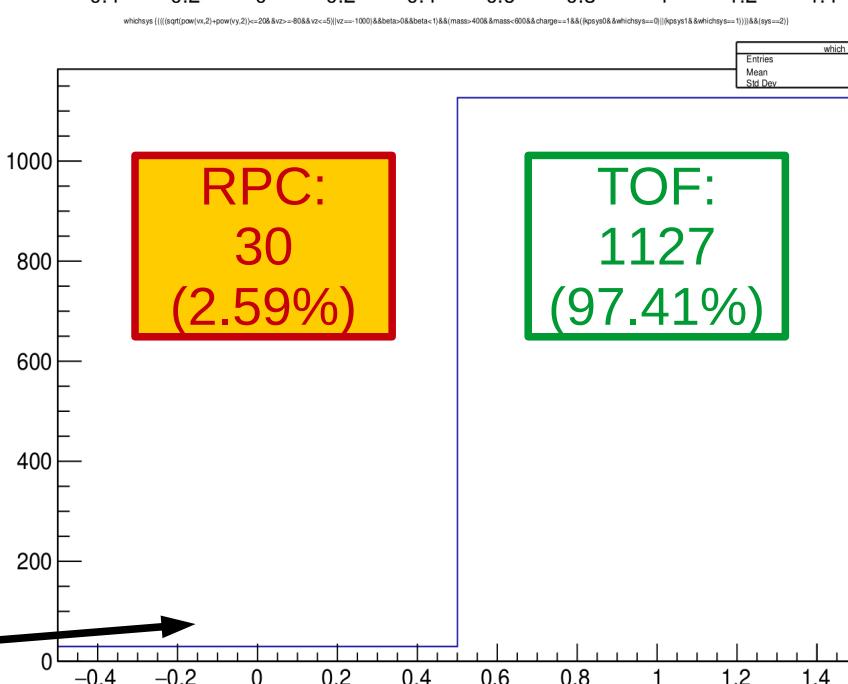
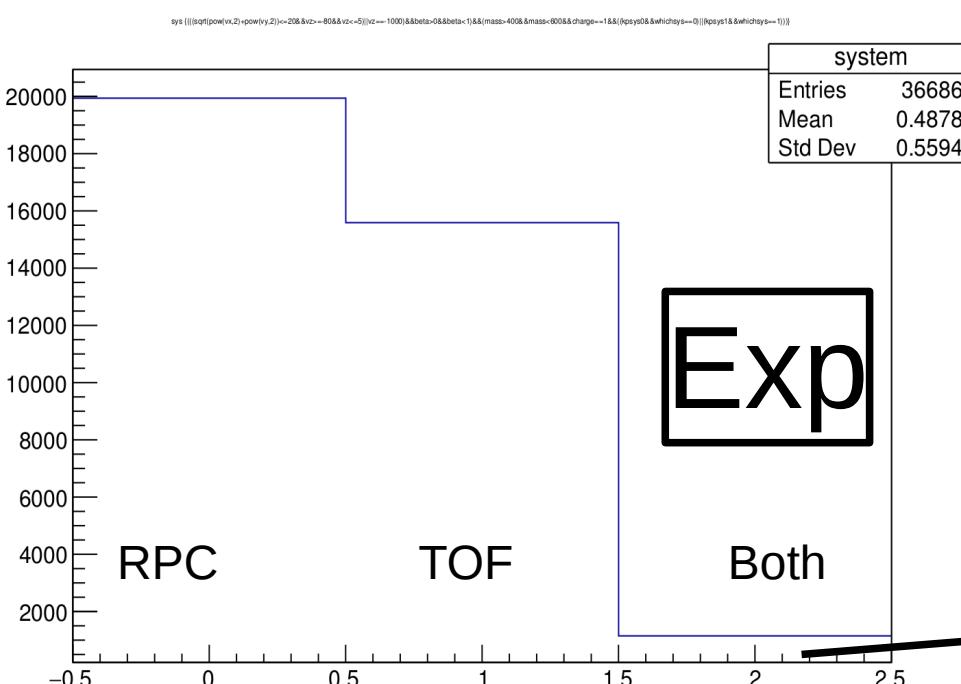
Common region analysis and efficiency correction

SPARE: detailed efficiency (input vs Mcrec matrices)
All bins fits (small, just a hint...)

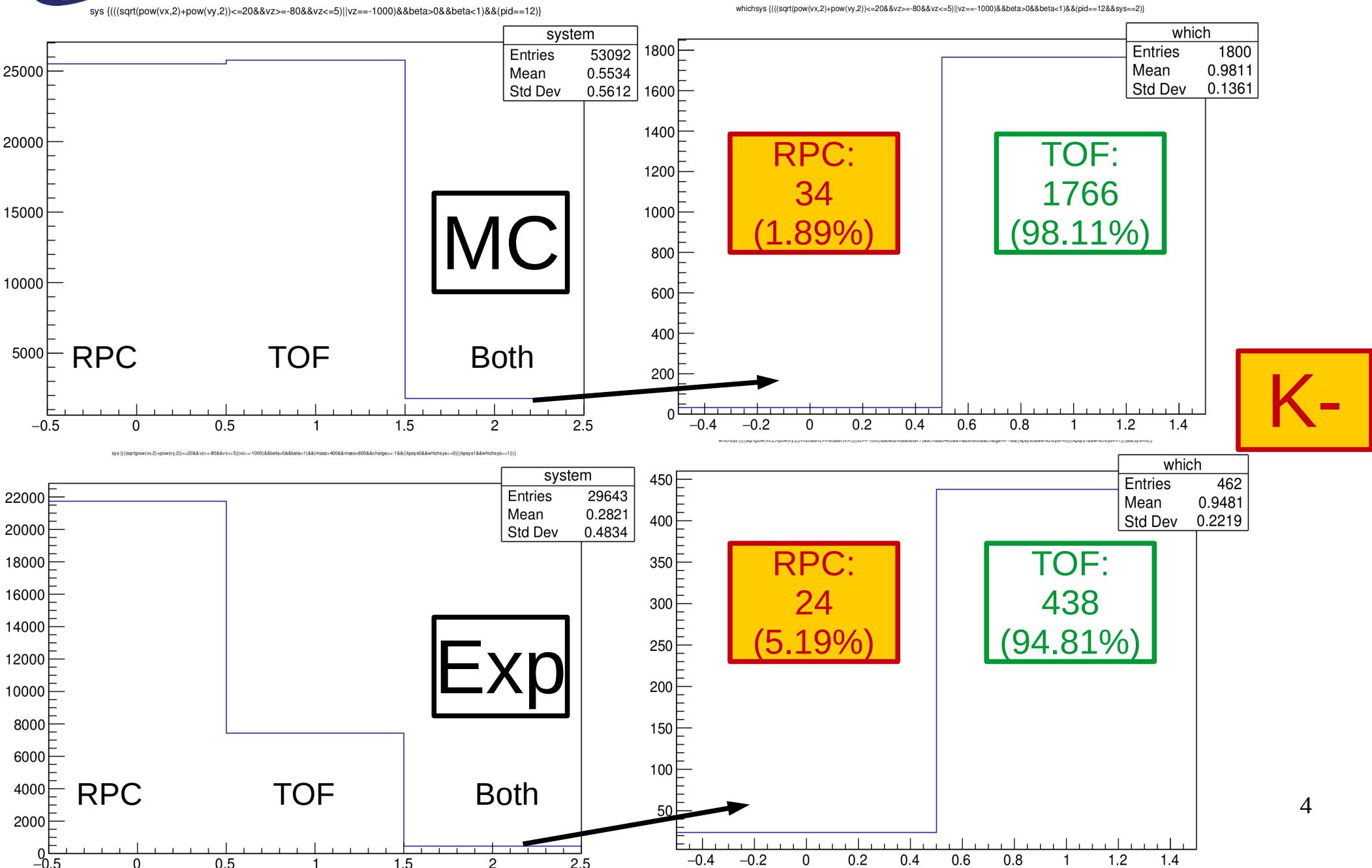
System Used



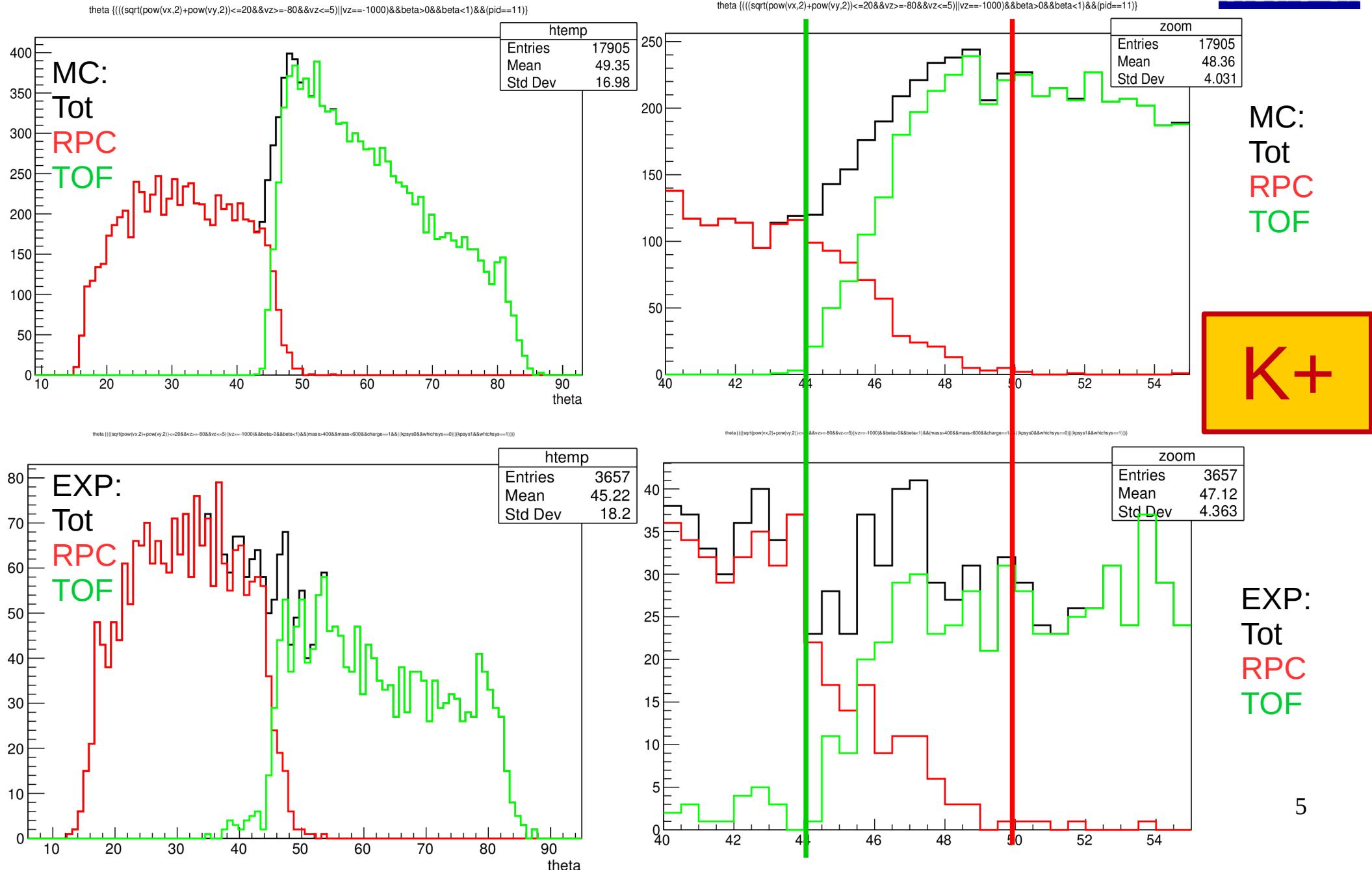
K+



System Used



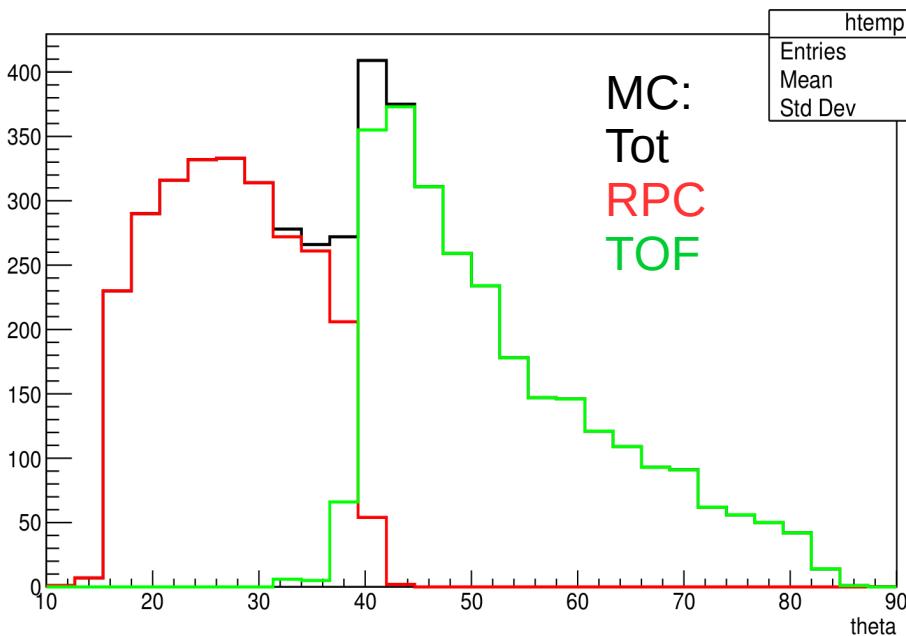
RPC & TOF separation in θ



RPC & TOF separation in θ

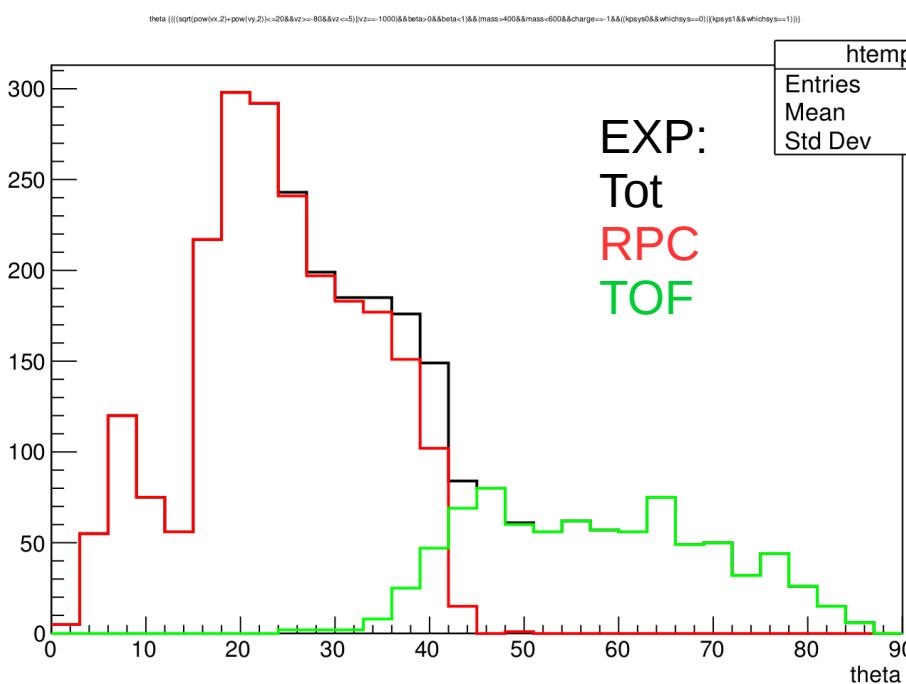
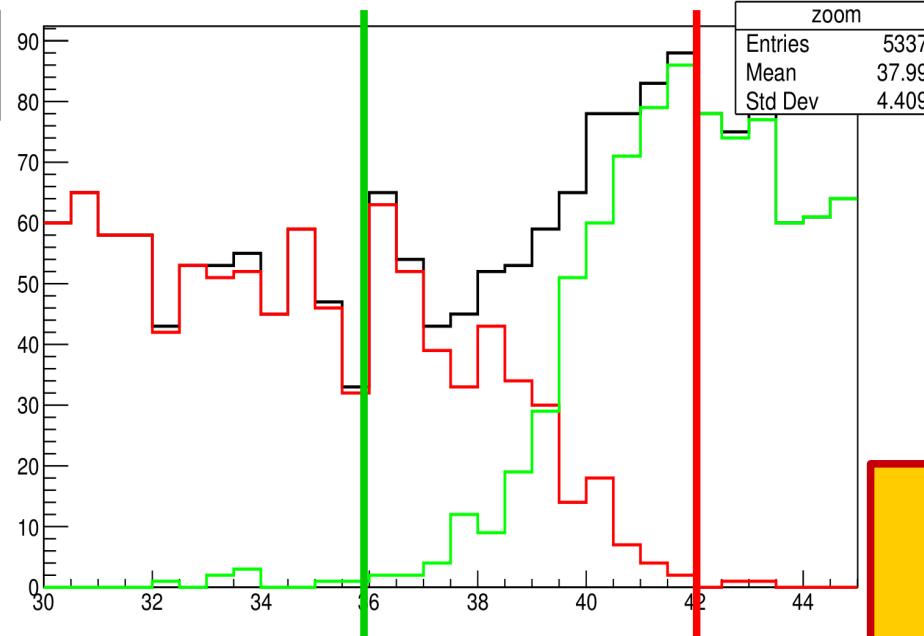
theta (((sqrt(pow(vx,2)+pow(vy,2))<=20&&vz>=-80&&vz<=5)||vz== -1000)&&beta>0&&beta<1)&&(pid==12)}

theta (((sqrt(pow(vx,2)+pow(vy,2))<=20&&vz>=-80&&vz<=5)||vz== -1000)&&beta>0&&beta<1)&&(pid==12)}

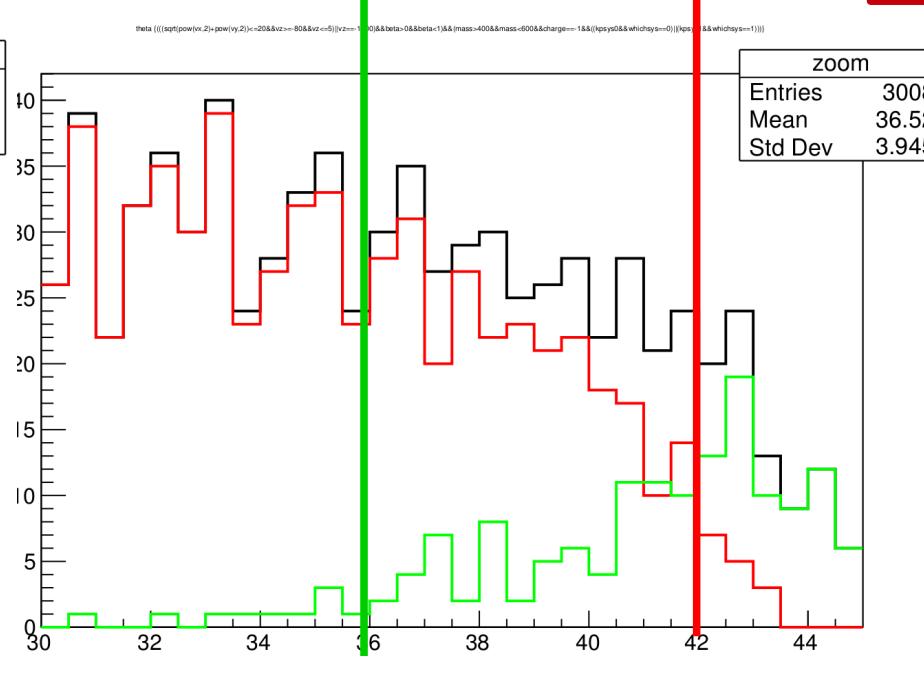


MC:
Tot
RPC
TOF

K-



EXP:
Tot
RPC
TOF



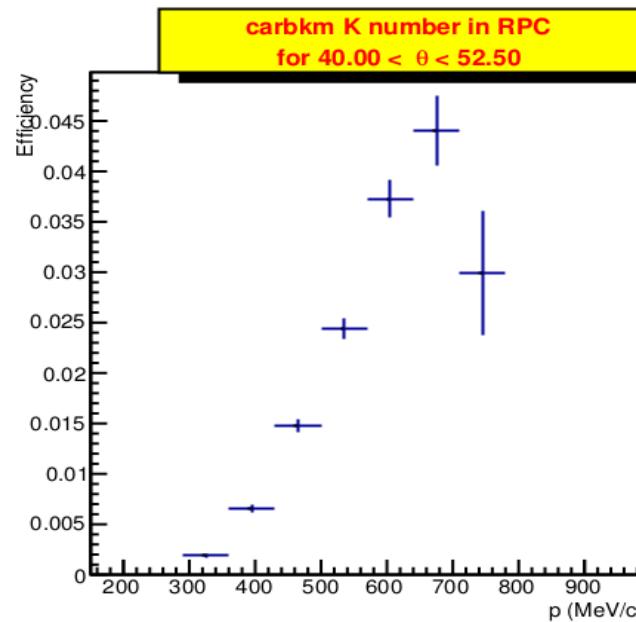
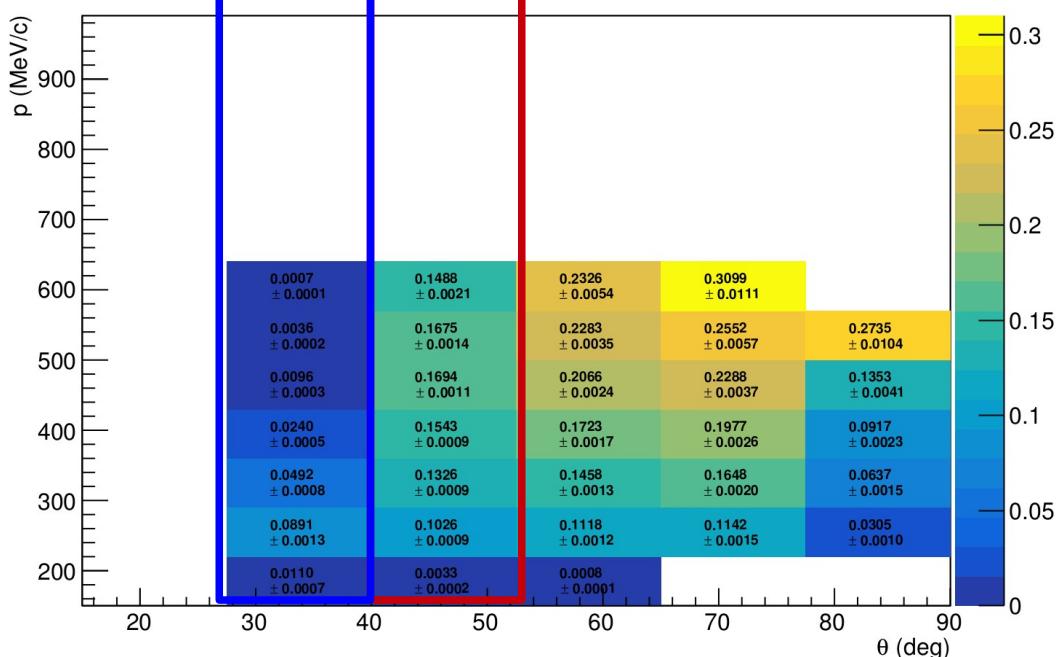
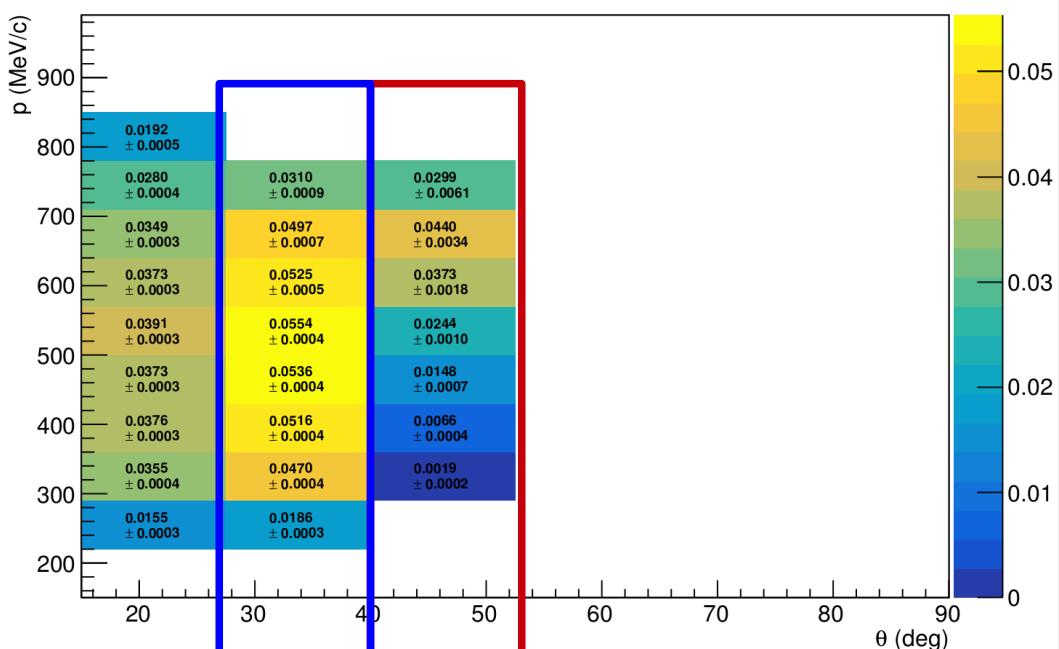
Common region analysis

Redefinition of RPC & TOF input matrices:

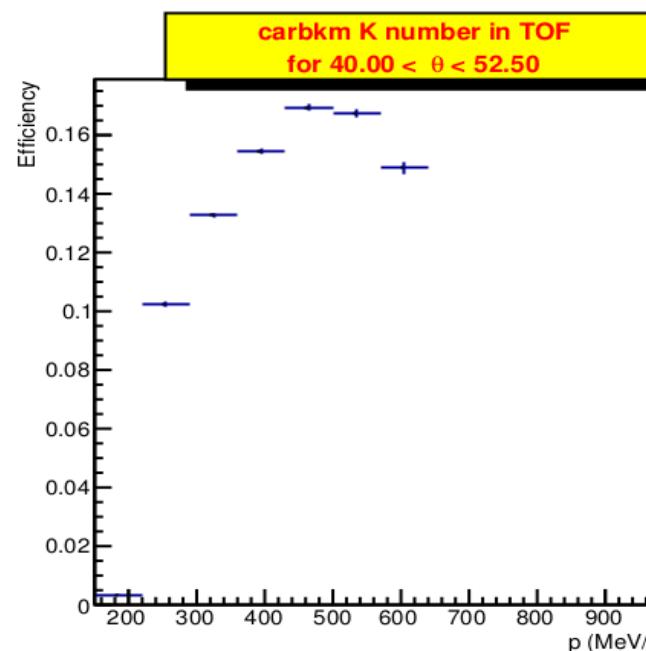
- K+ RPC → $\theta \leq 50$
- K- RPC → $\theta \leq 42$
- K+ TOF → $\theta \geq 44$
- K- TOF → $\theta \geq 36$

Efficiency correction in the common region
 $40 < \theta < 52$

Carb K- efficiency

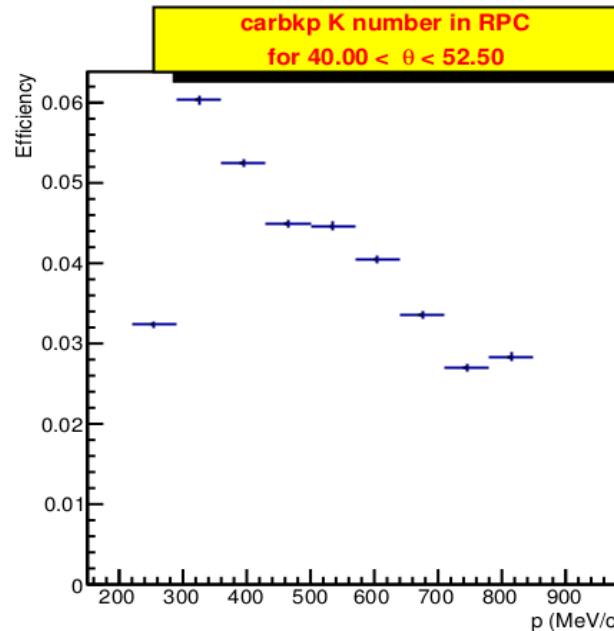
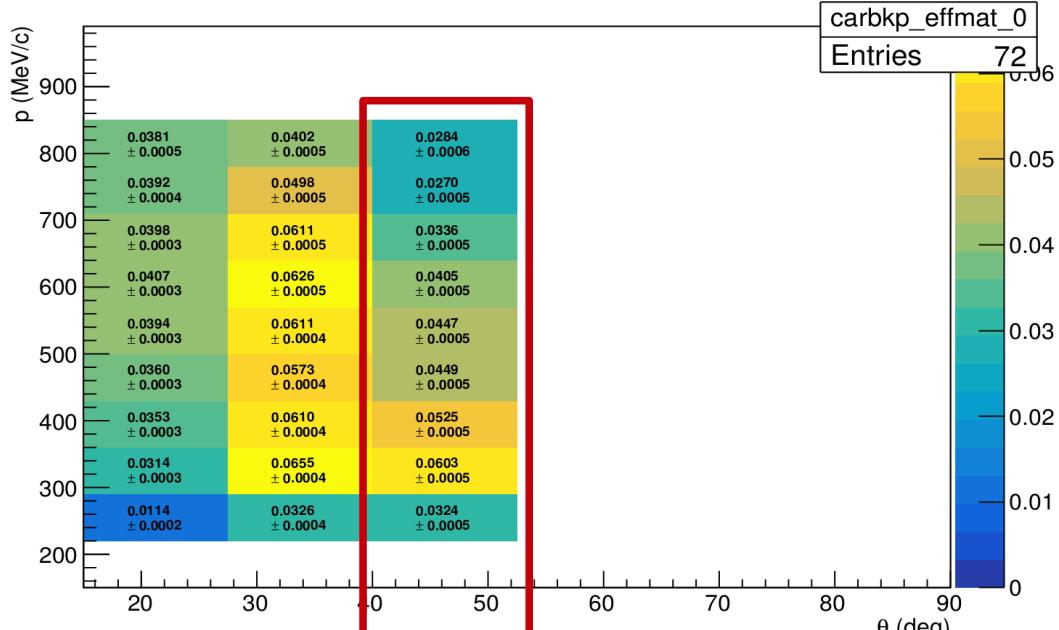


RPC

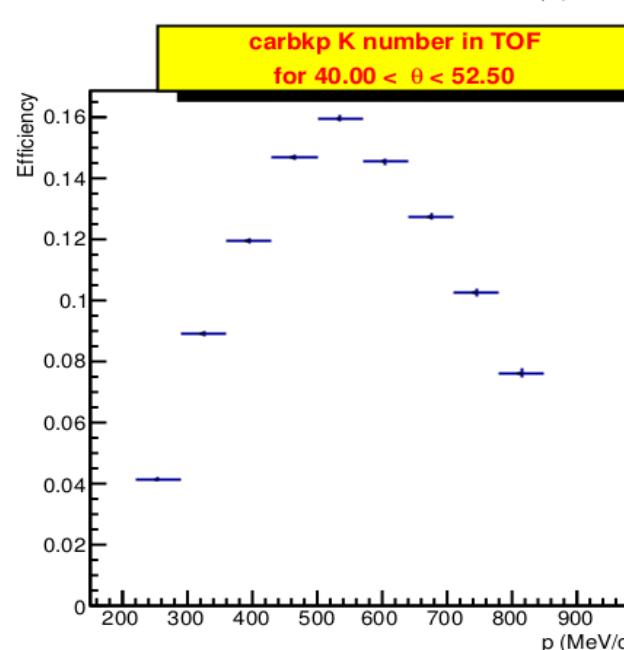
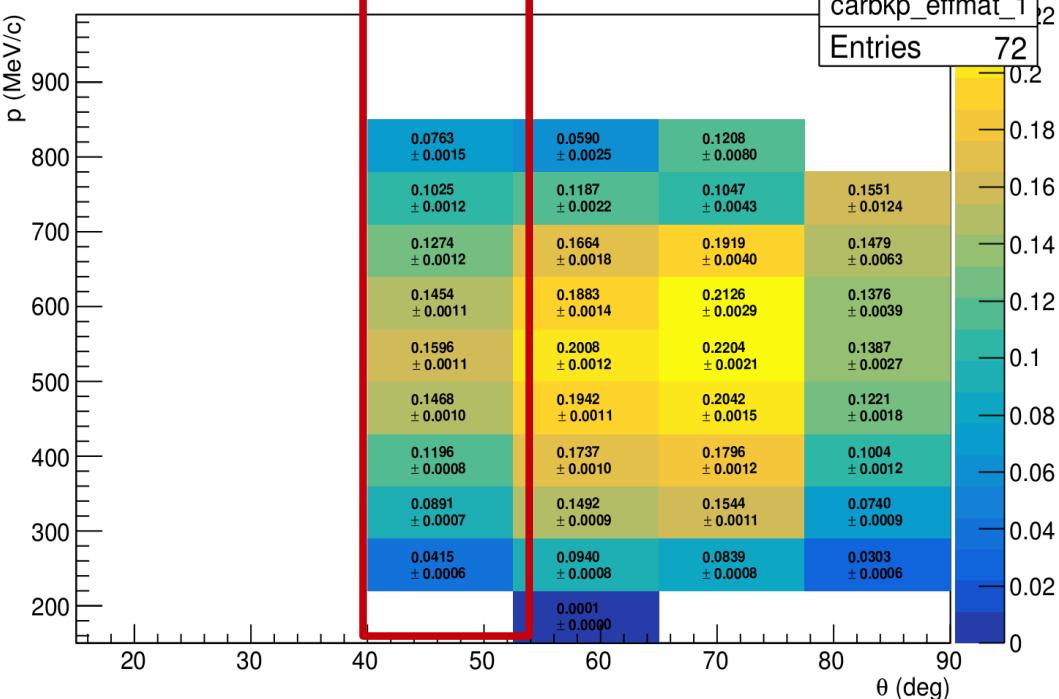


TOF

Carb K⁺ efficiency

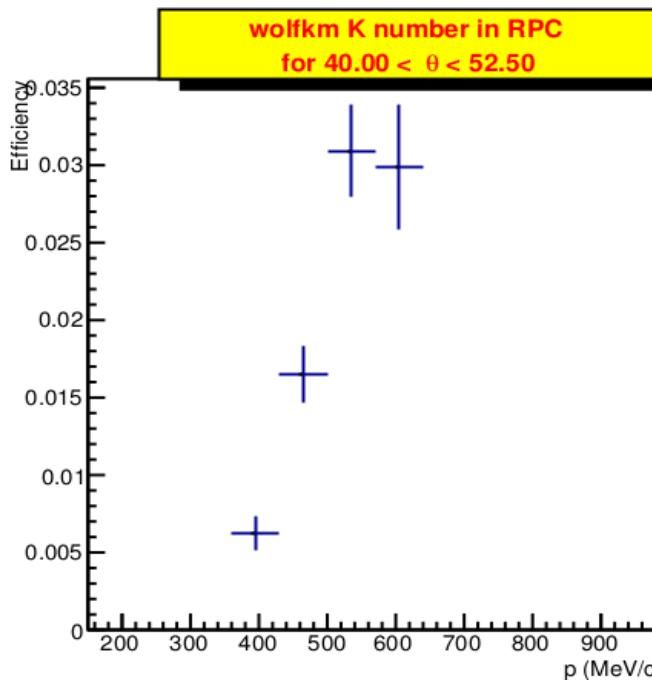
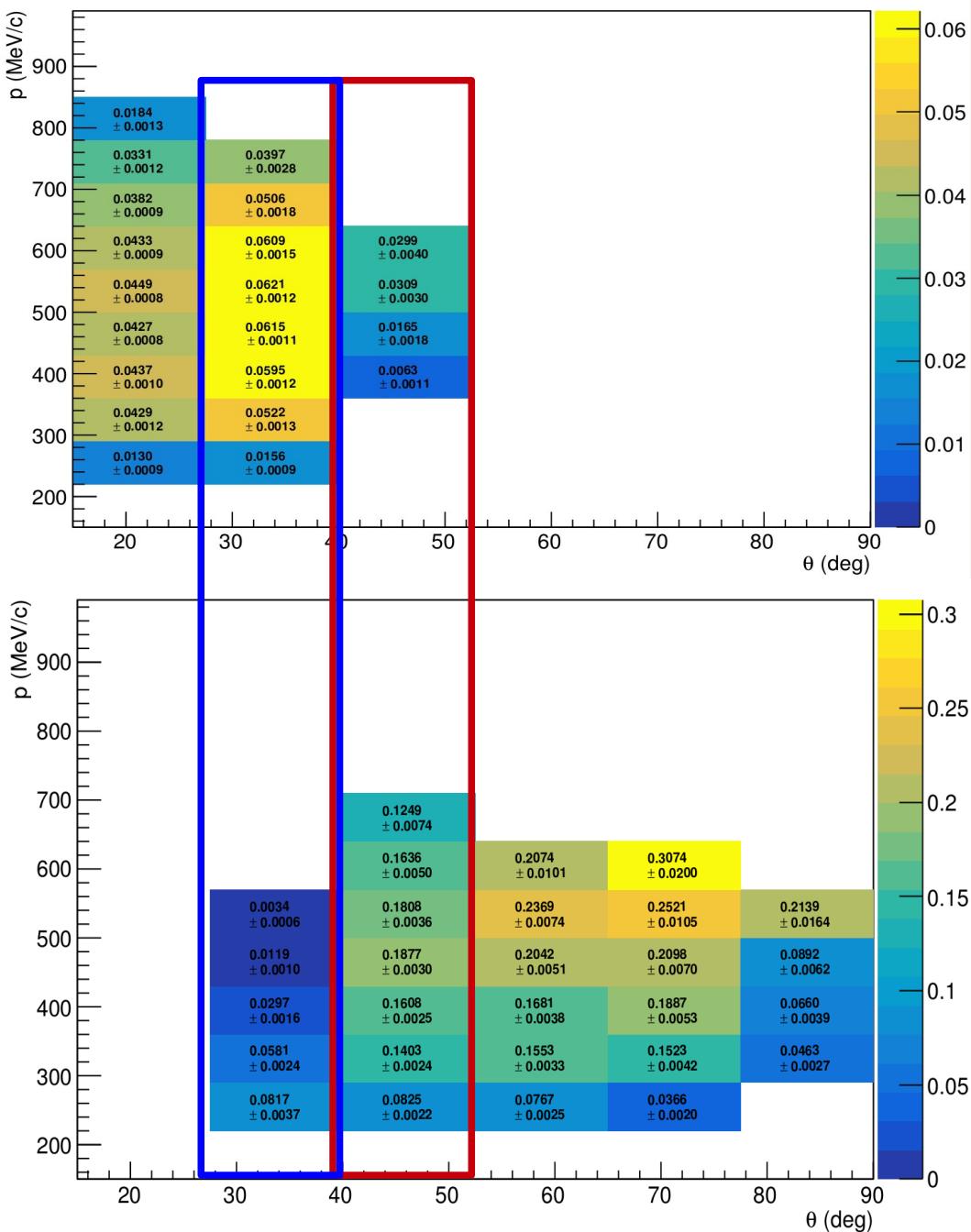


RPC

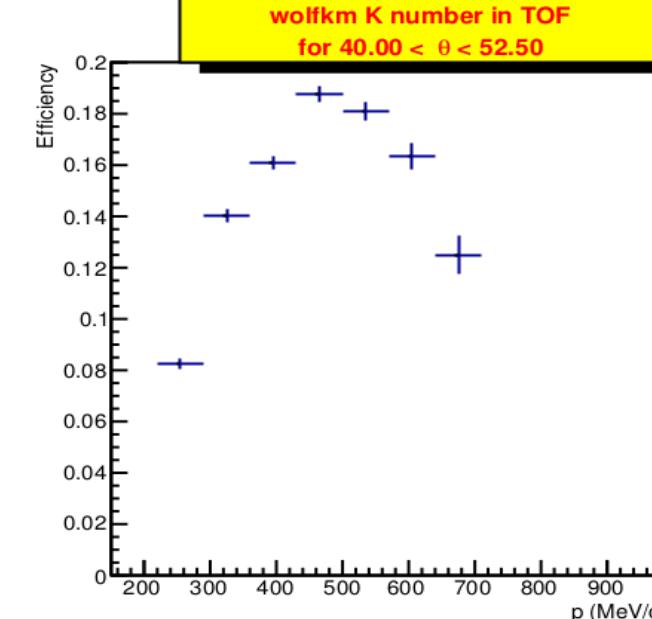
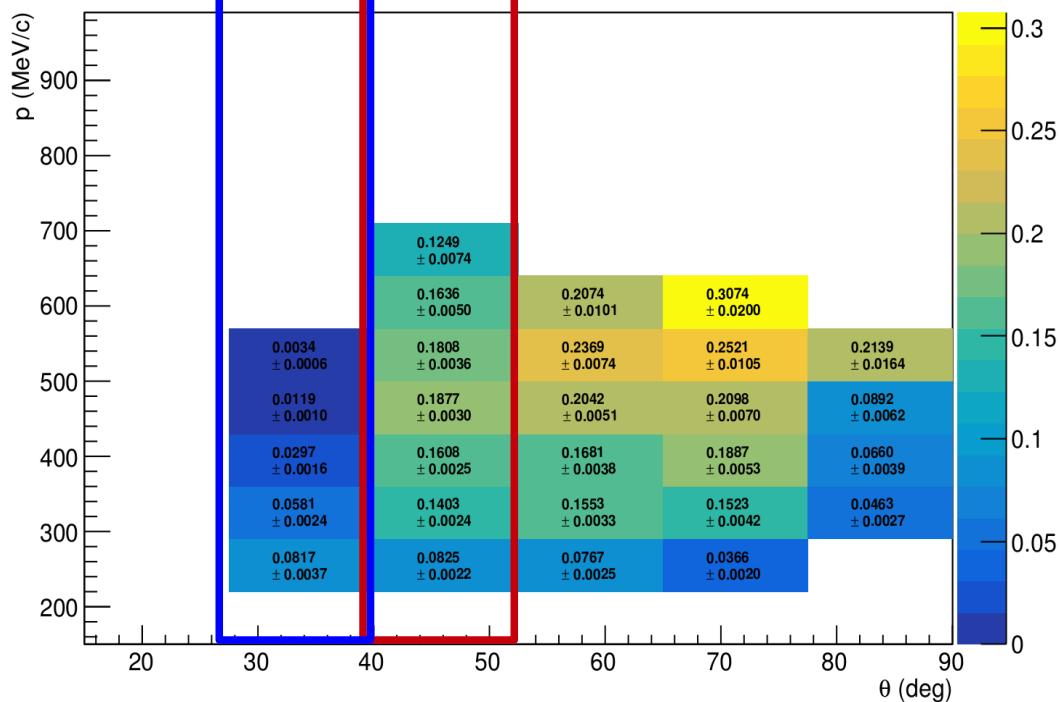


TOF

Wolf K- efficiency

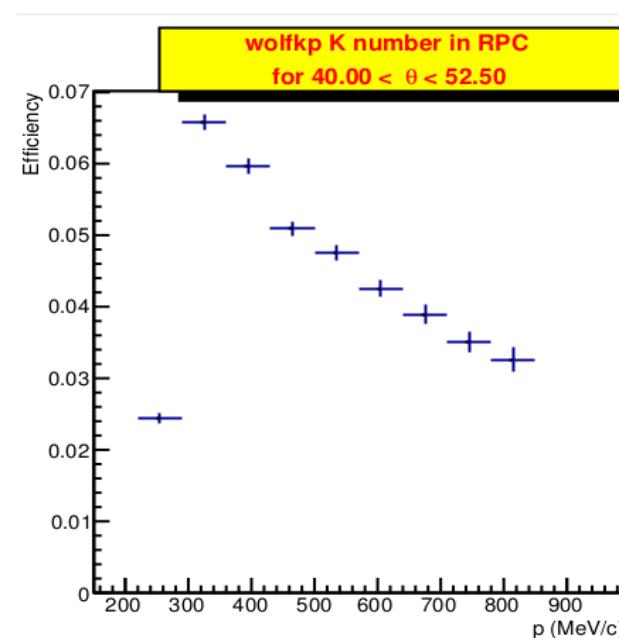
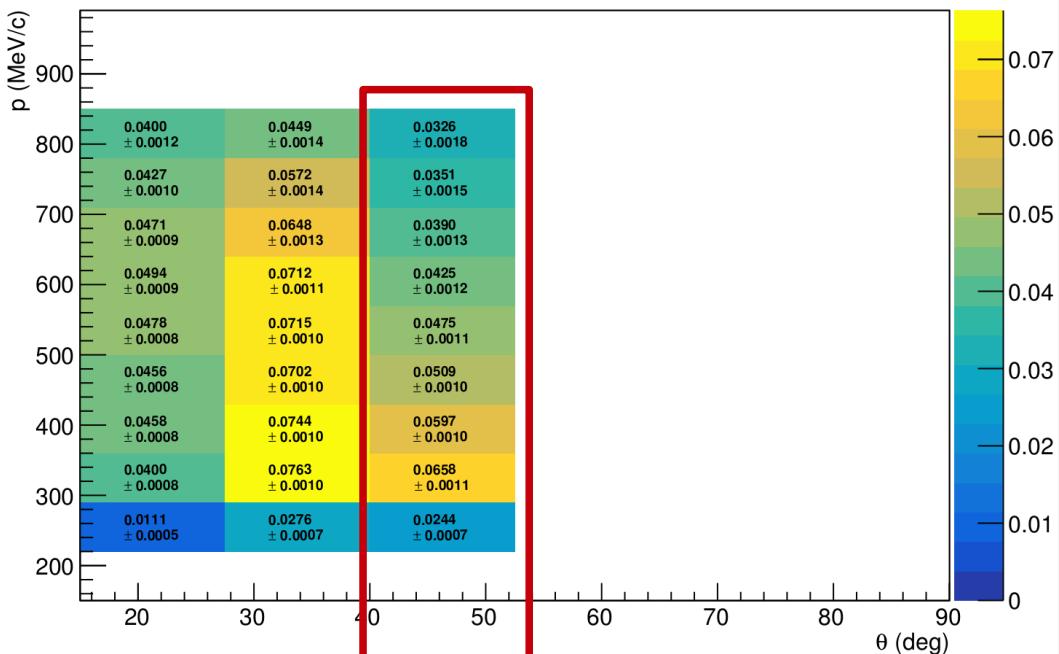


RPC

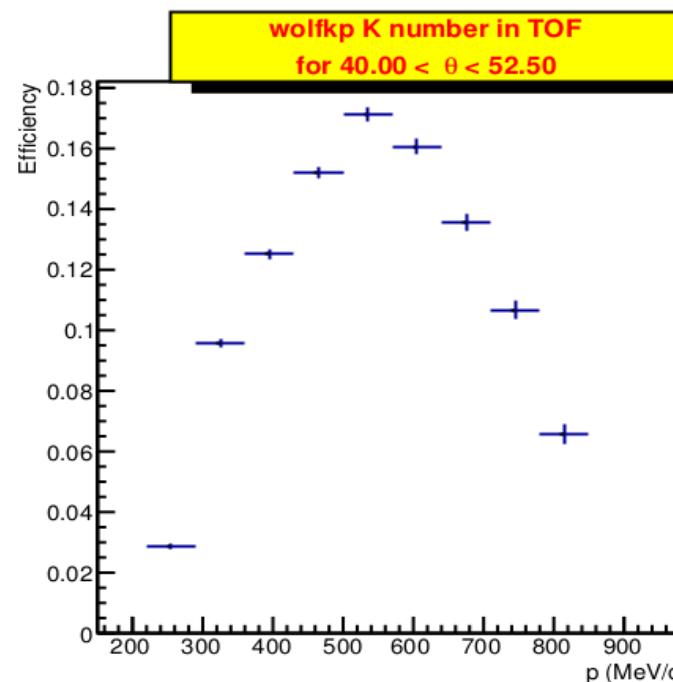
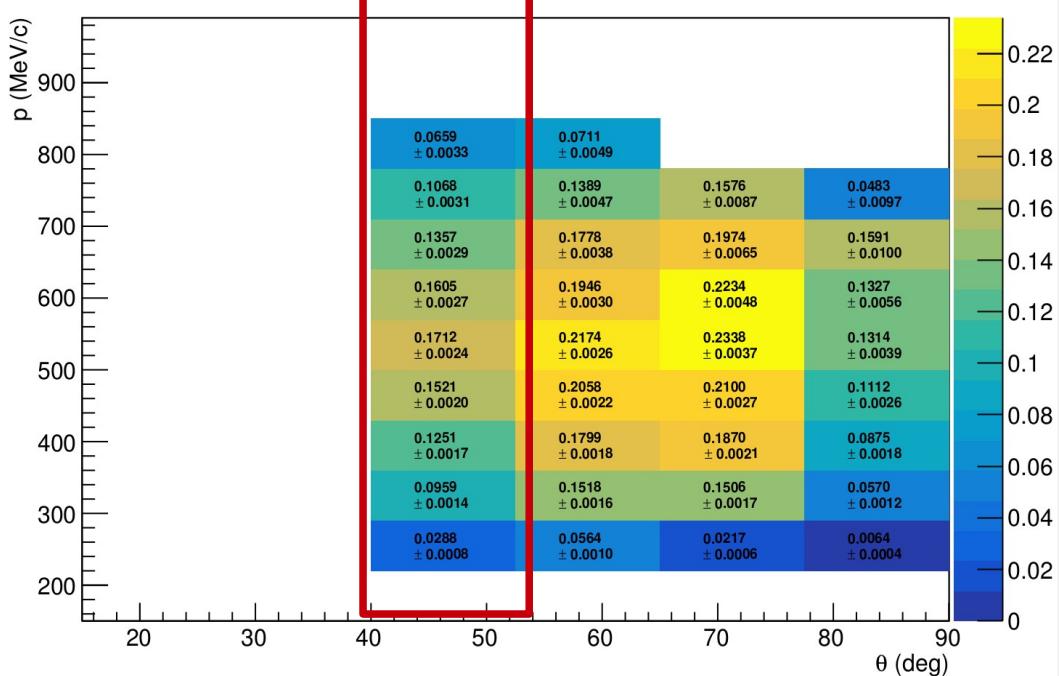


TOF

Wolf K+ efficiency



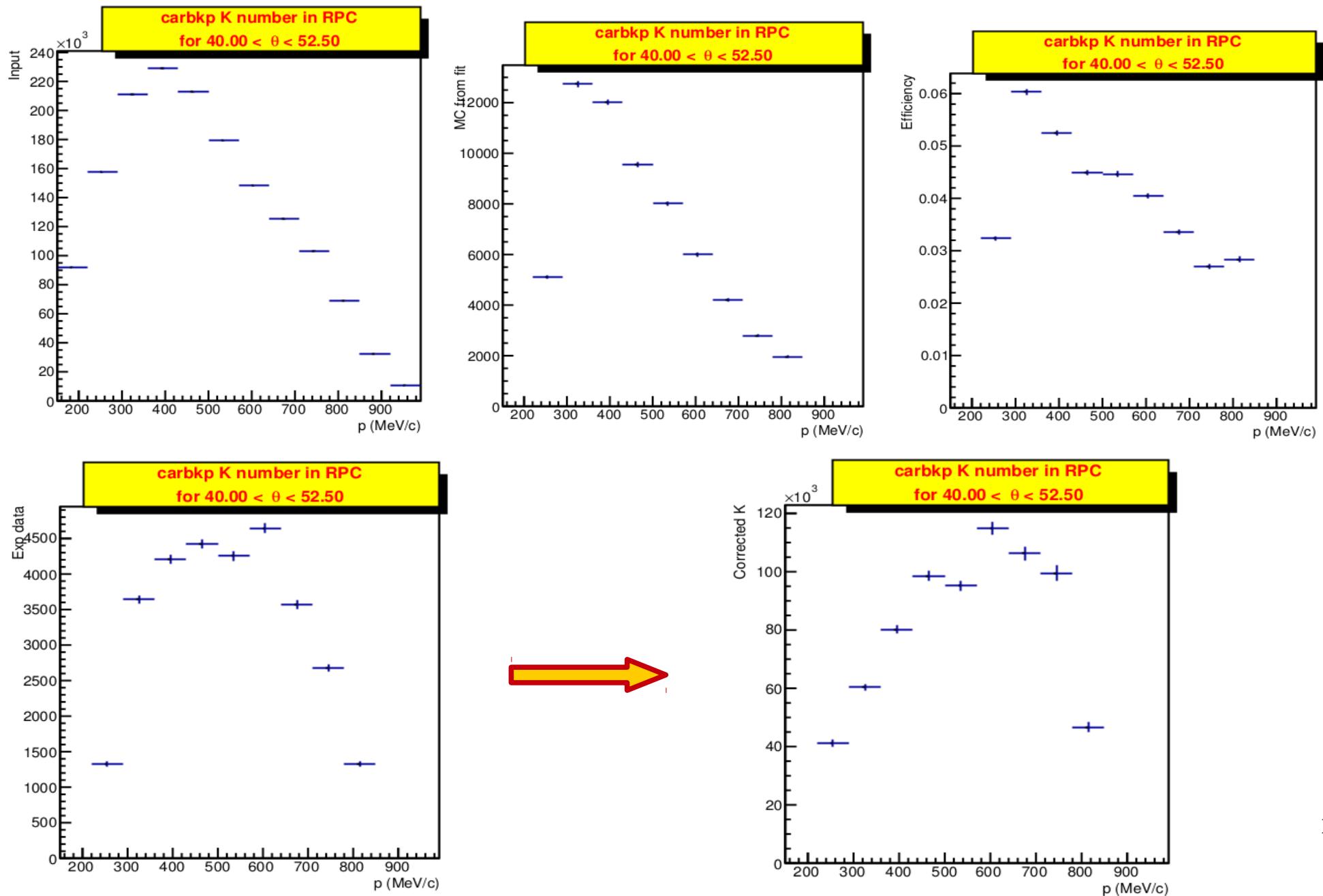
RPC



TOF

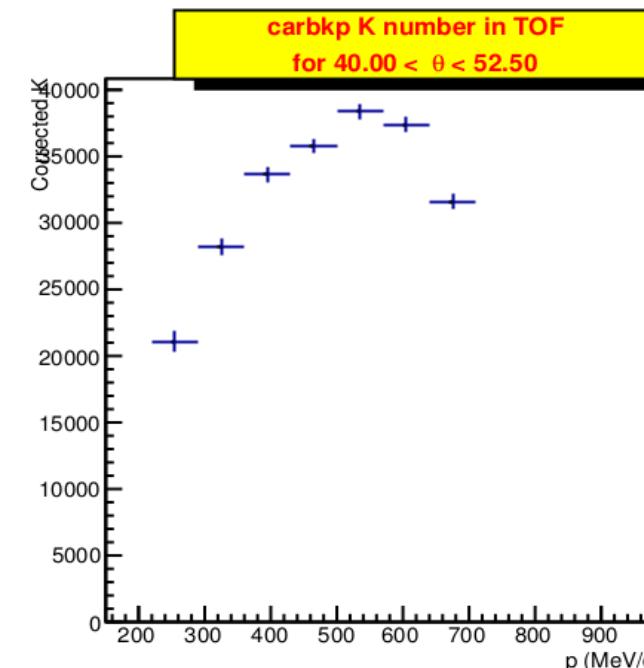
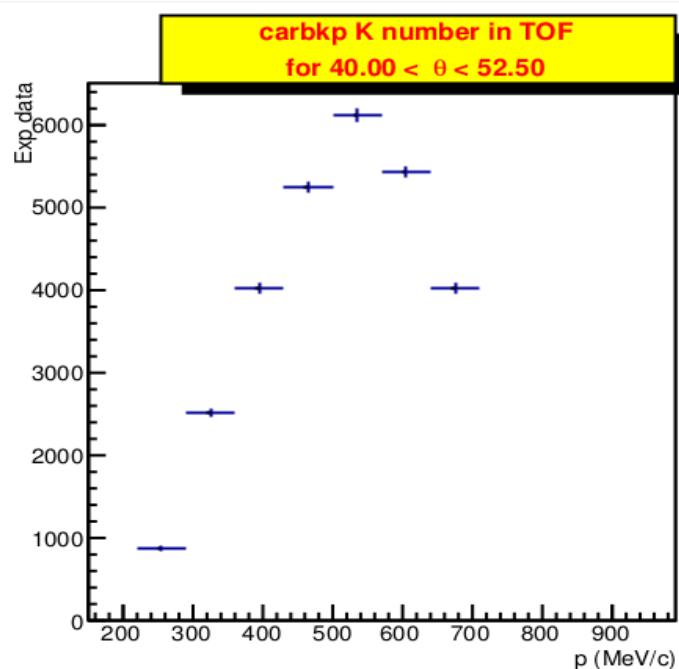
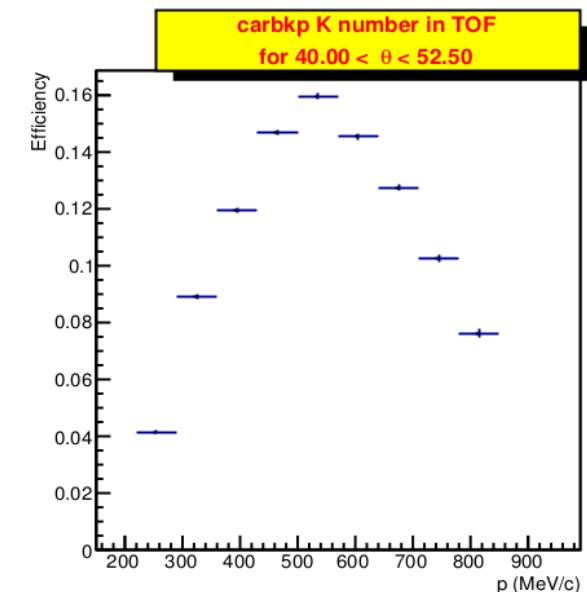
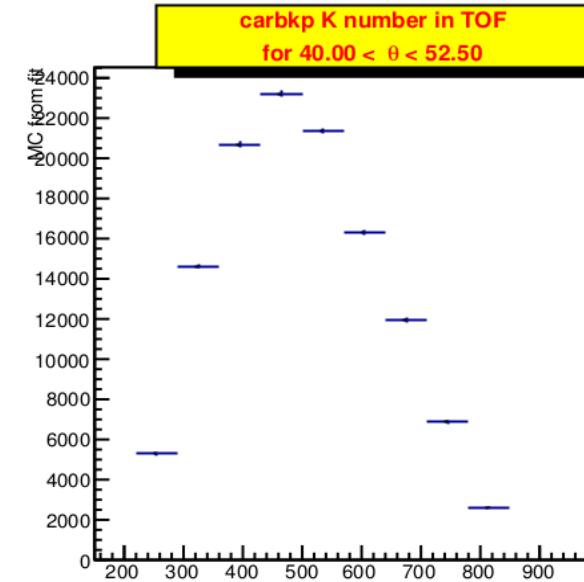
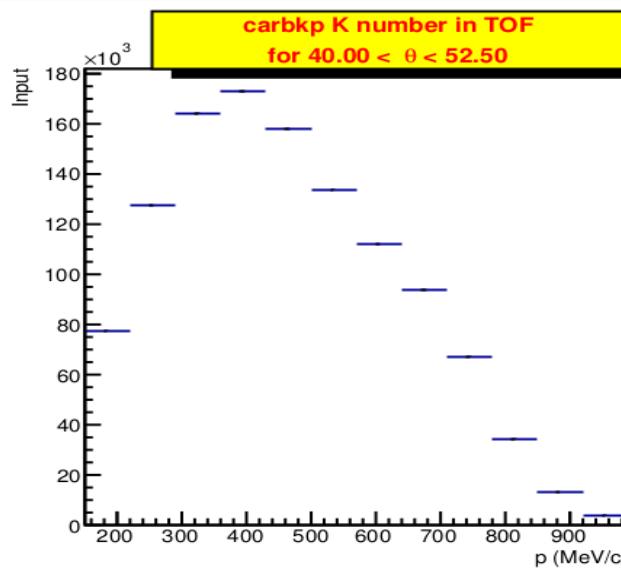
40 < θ < 52 region

Carb K+ RPC



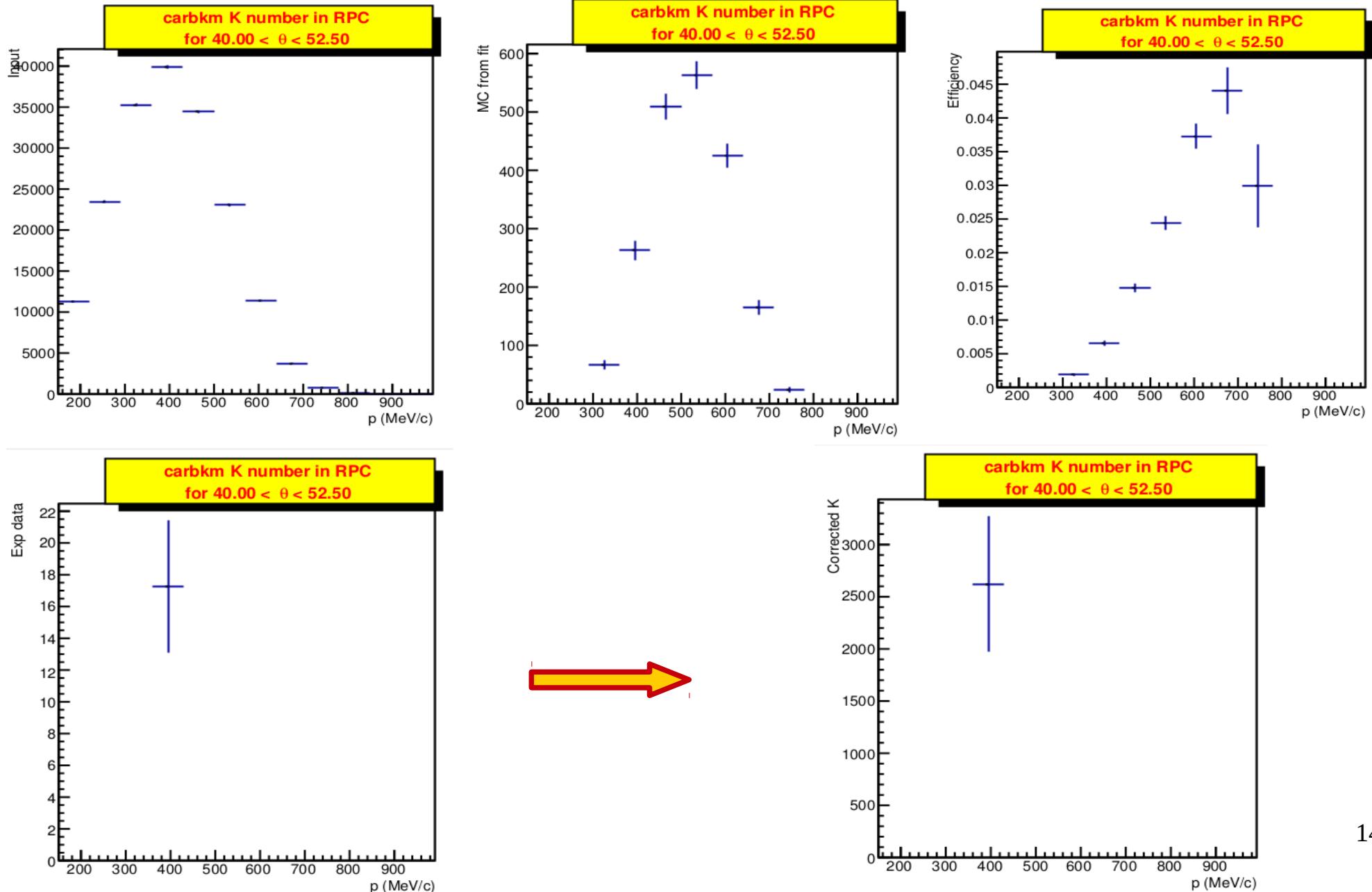
40 < θ < 52 region

Carb K+ TOF



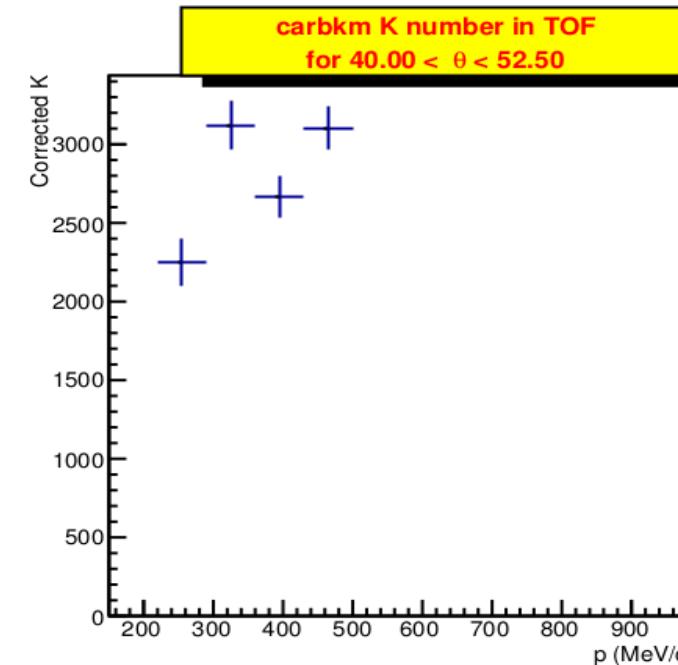
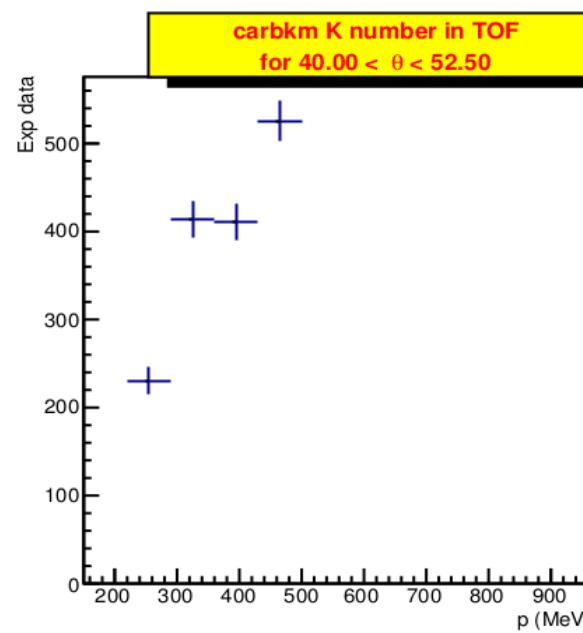
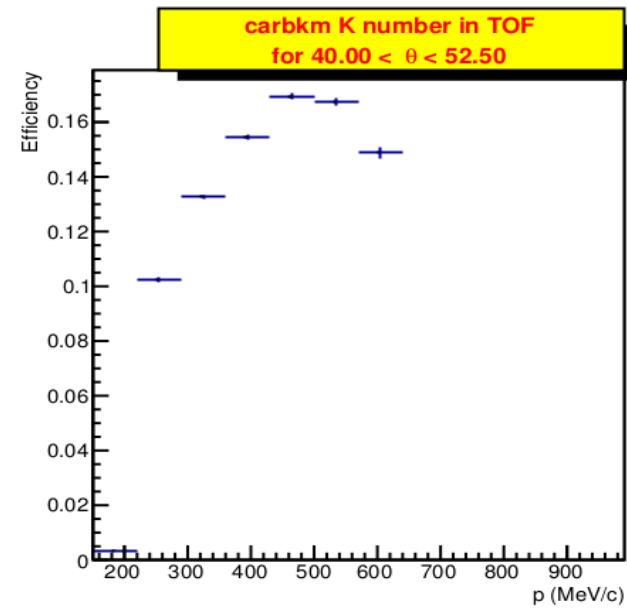
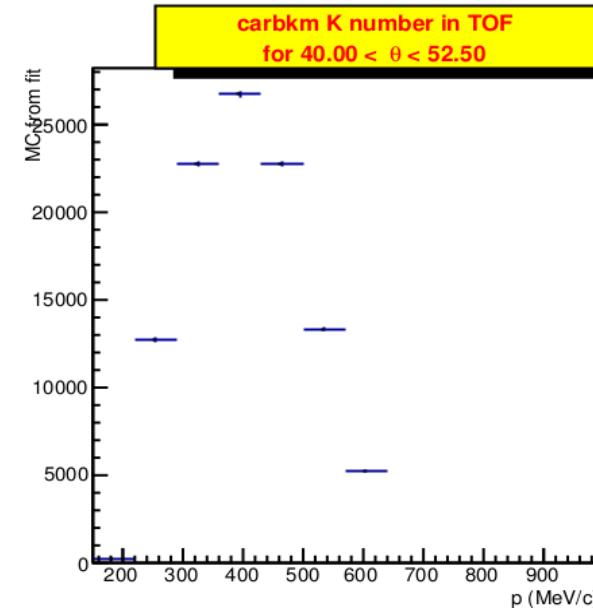
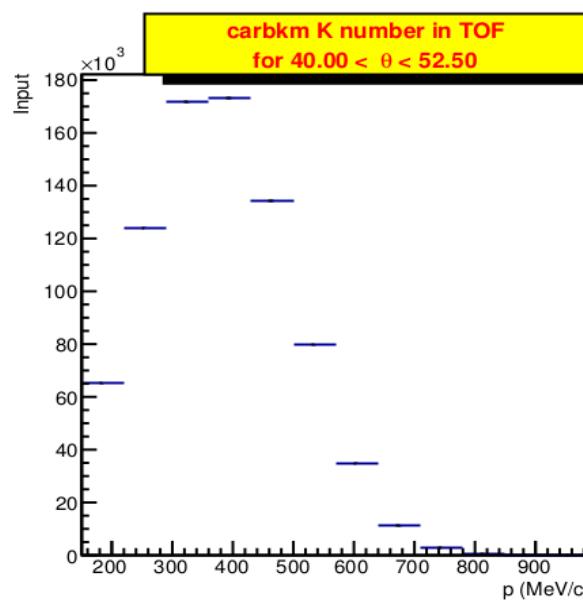
40 < θ < 52 region

Carb K- RPC



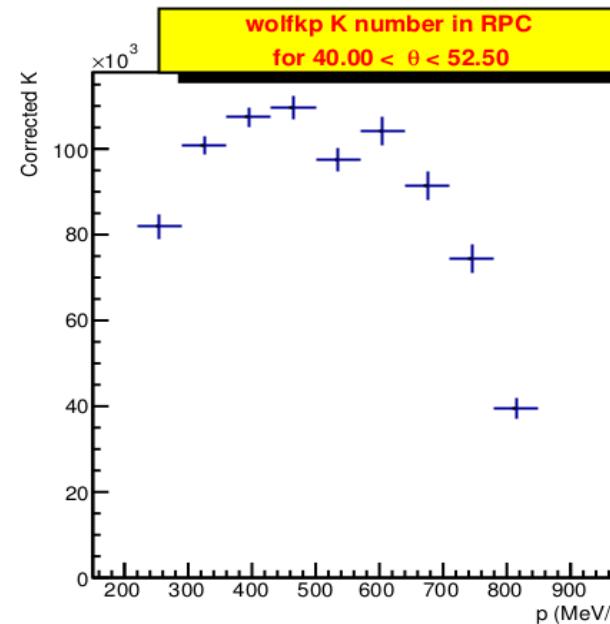
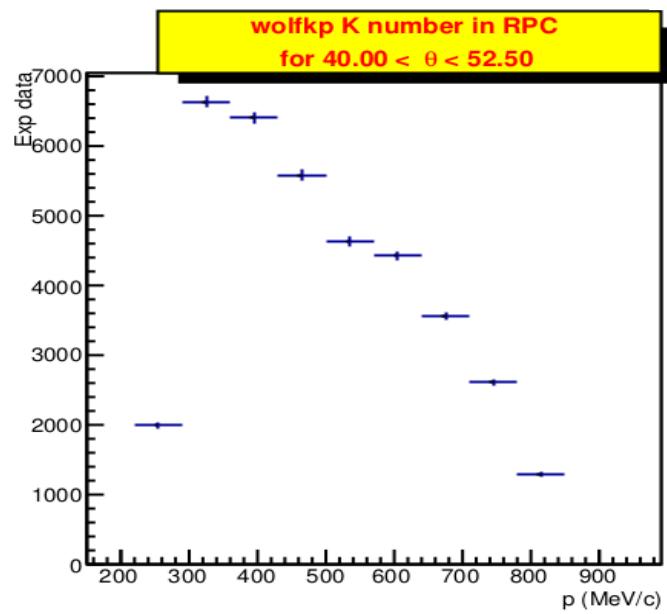
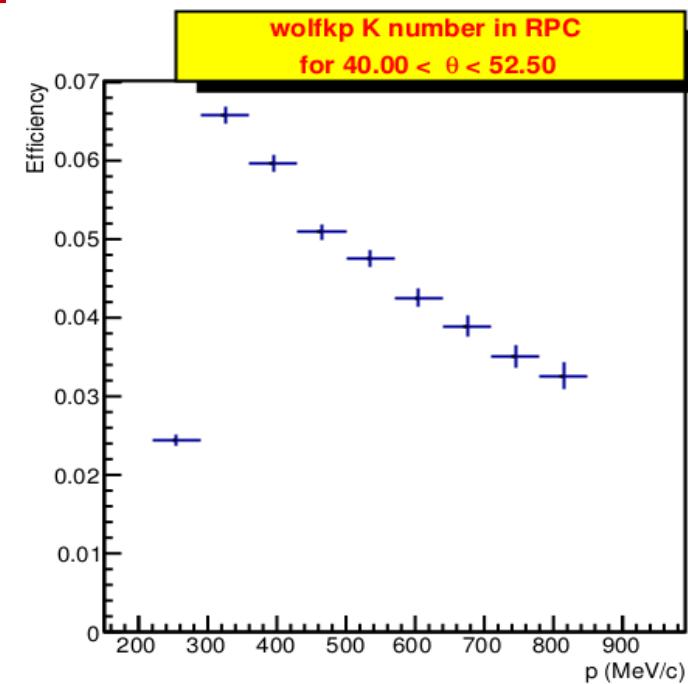
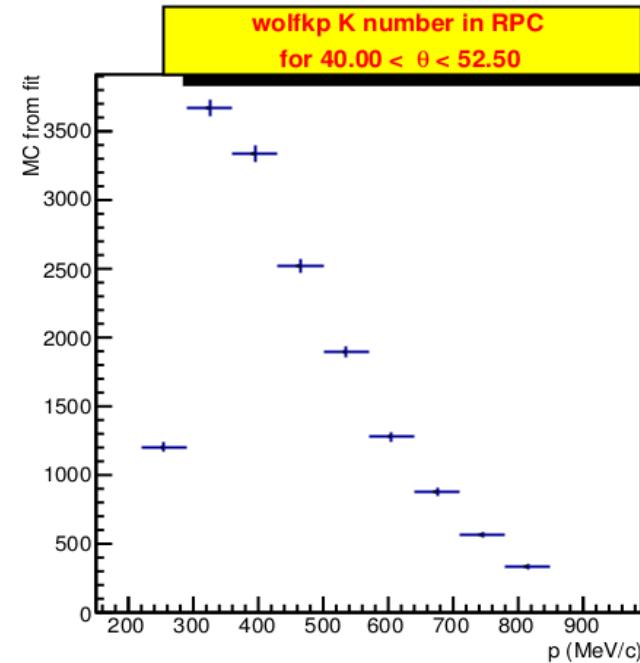
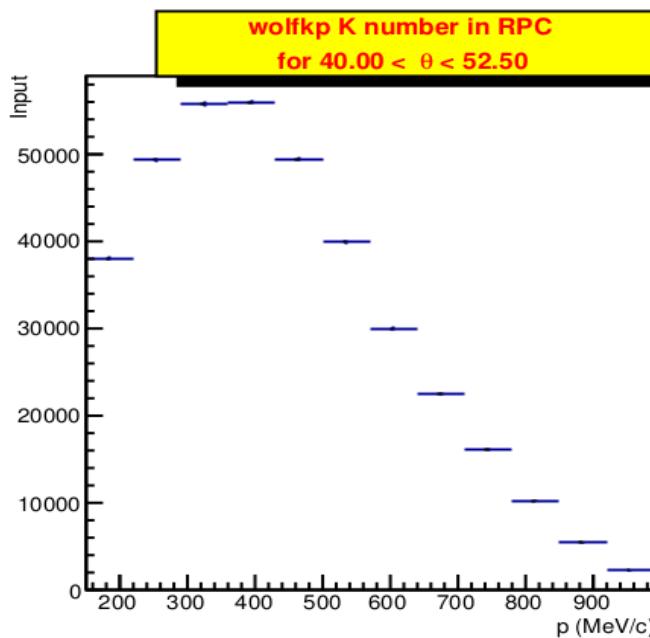
40 < θ < 52 region

Carb K- TOF

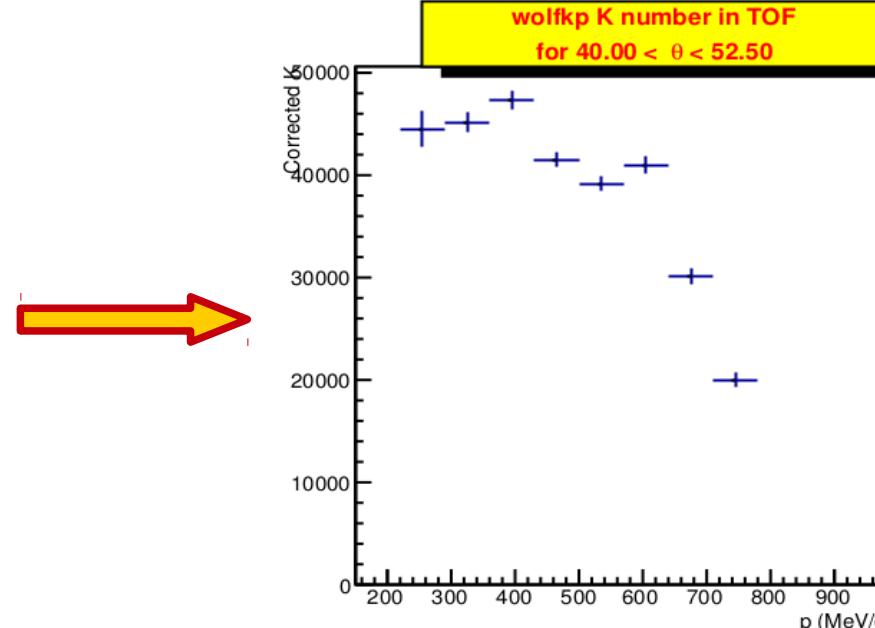
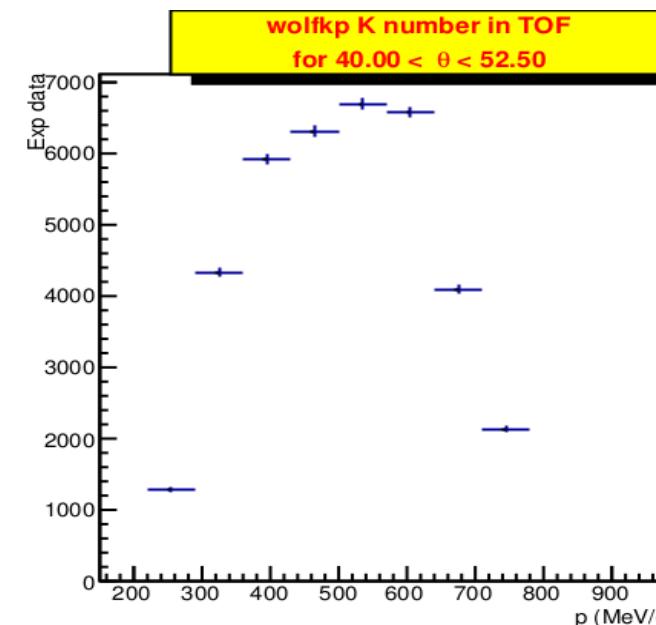
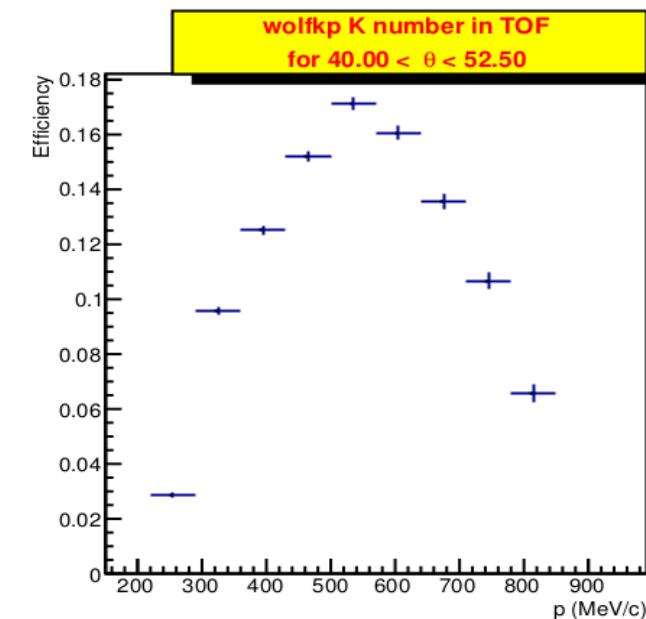
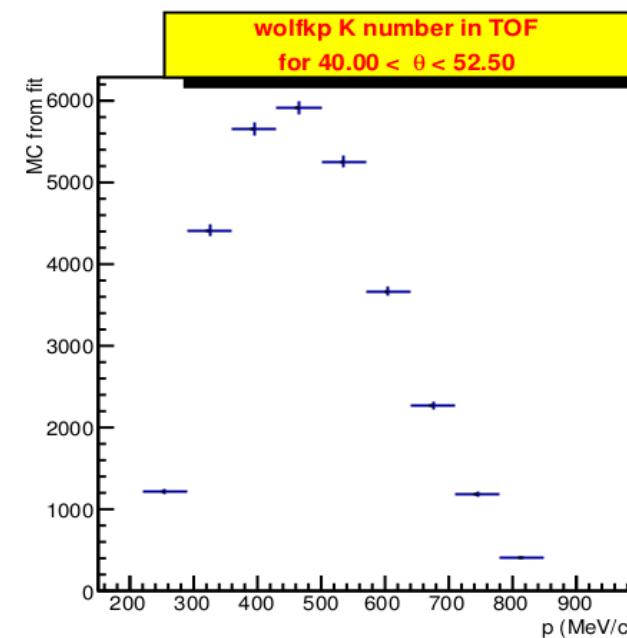
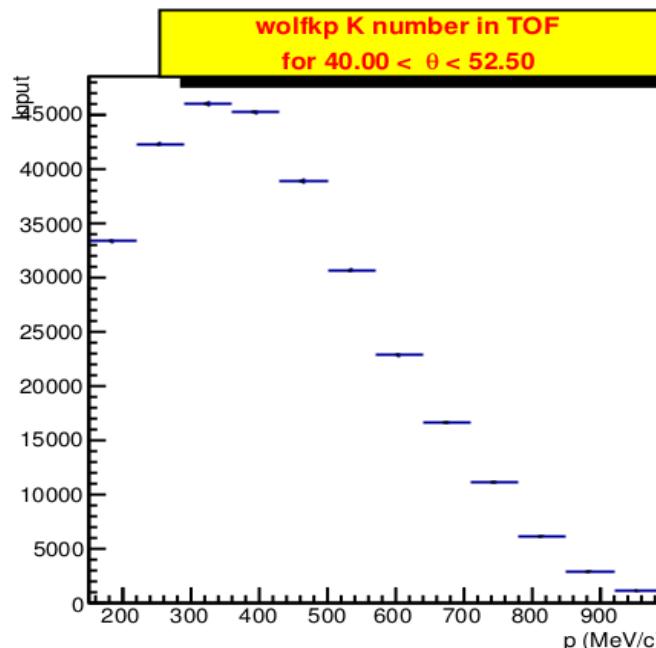


40 < θ < 52 region

Wolf K+ RPC

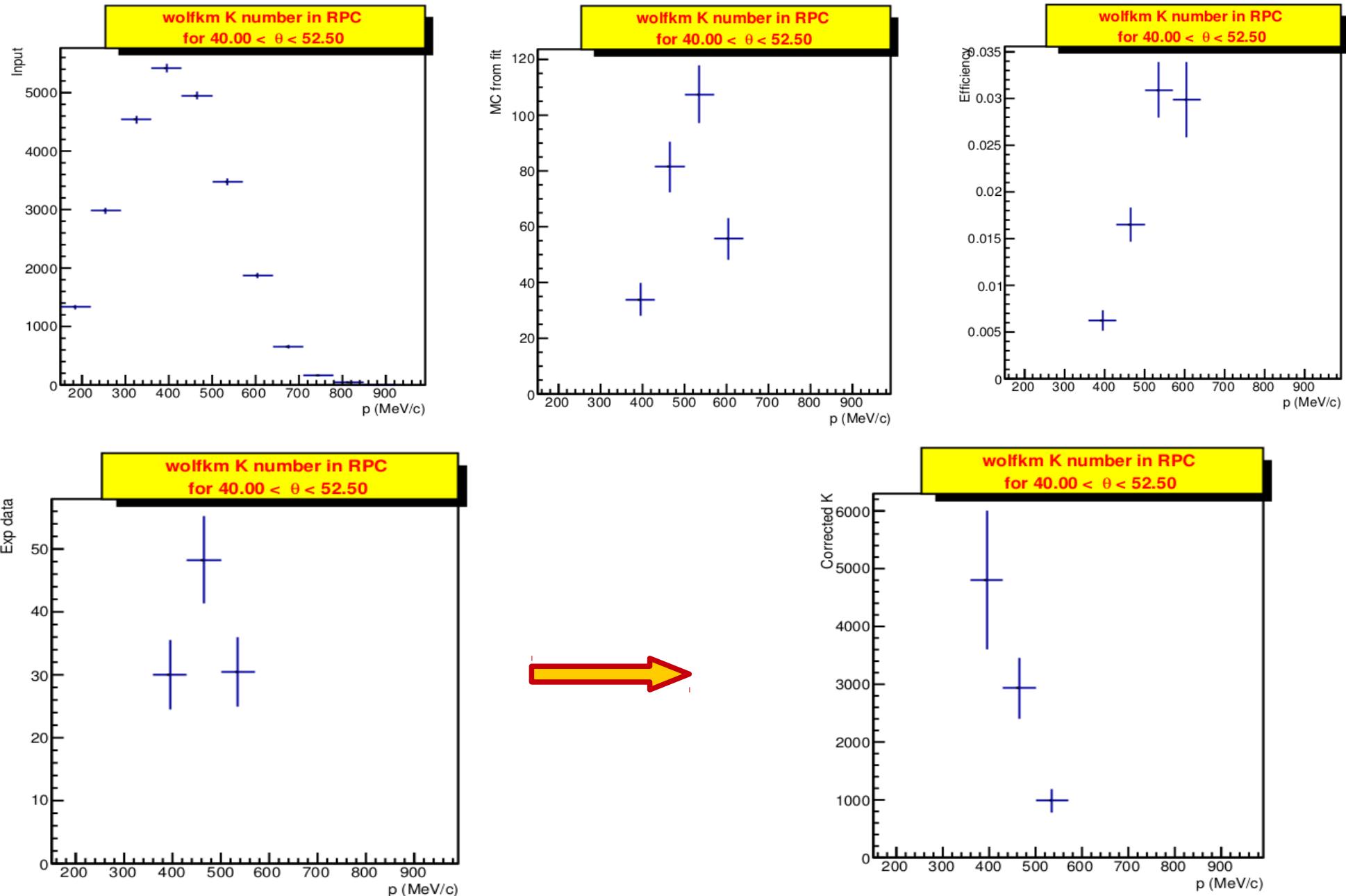


$40 < \theta < 52$ region
Wolf K+ TOF



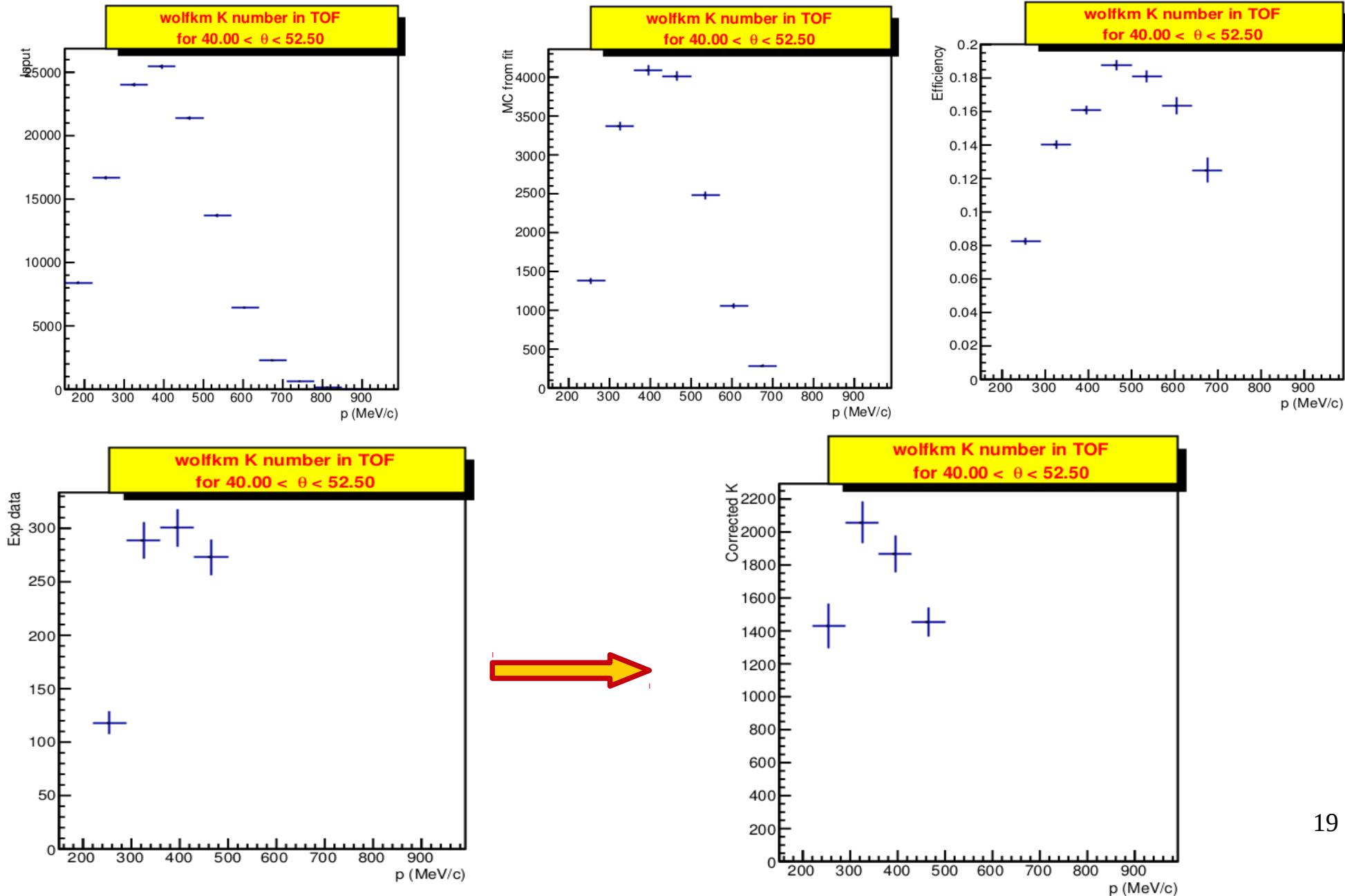
40 < θ < 52 region

Wolf K- RPC

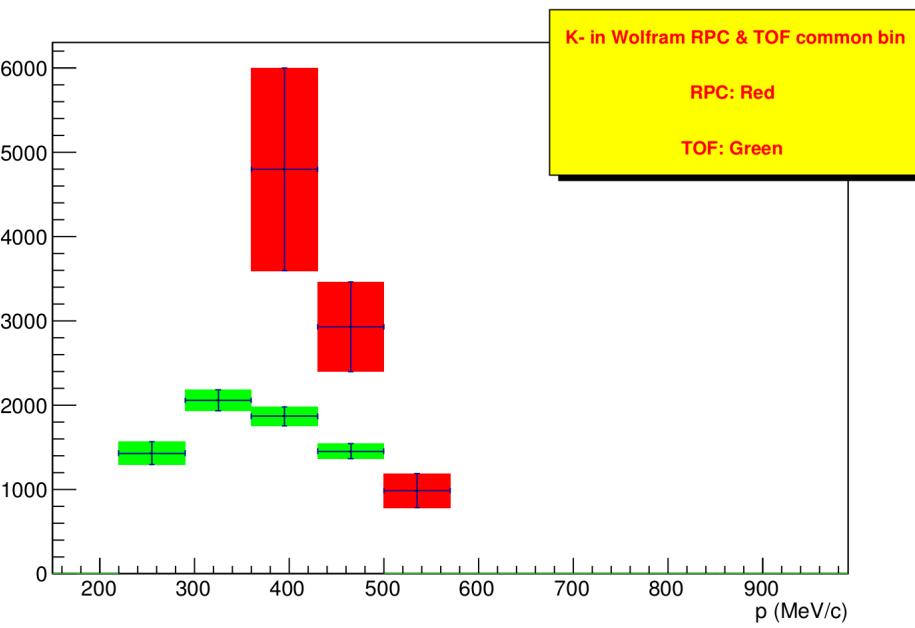
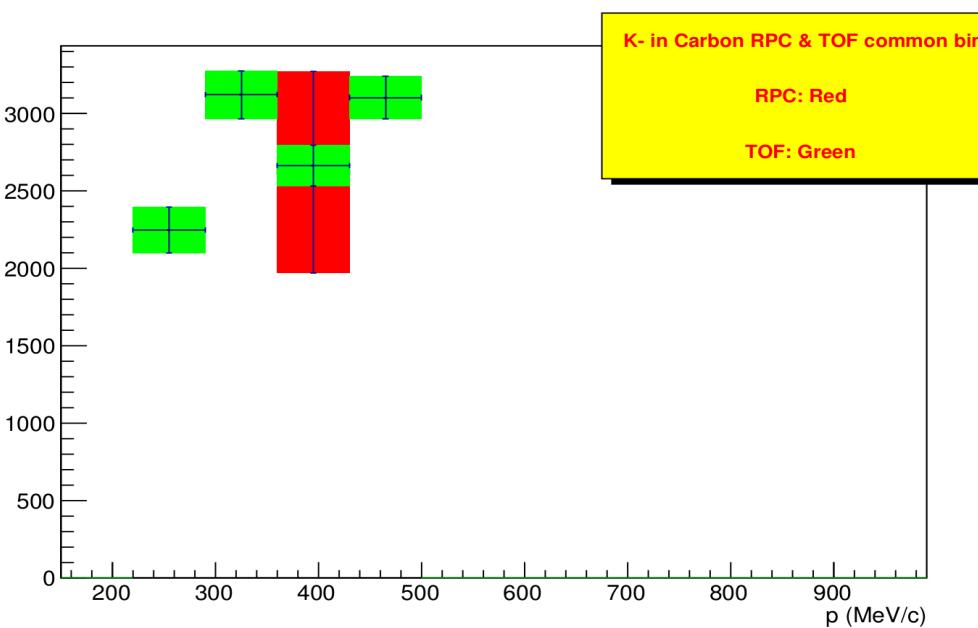
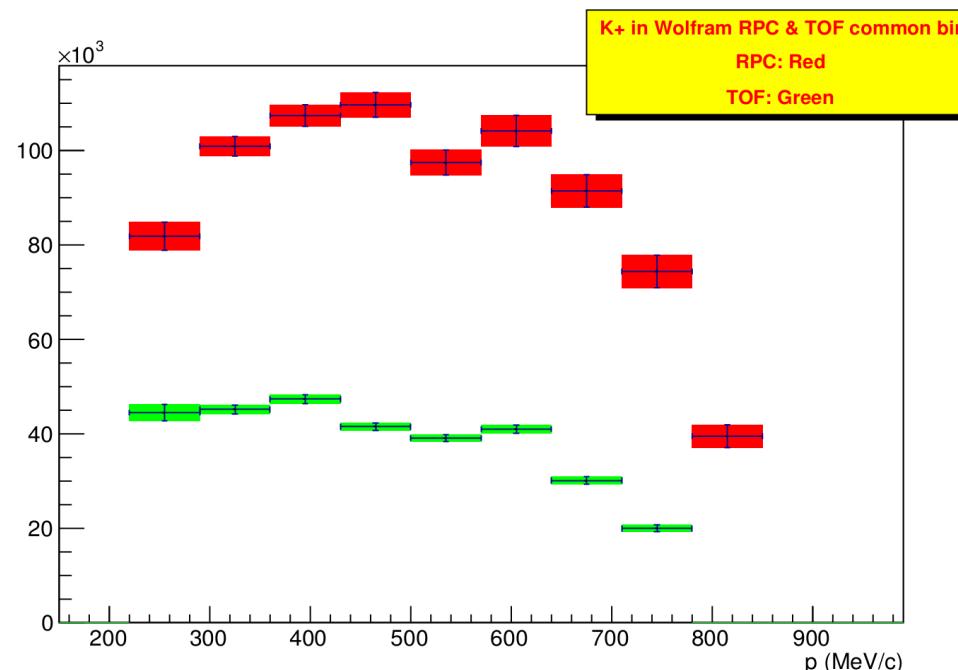
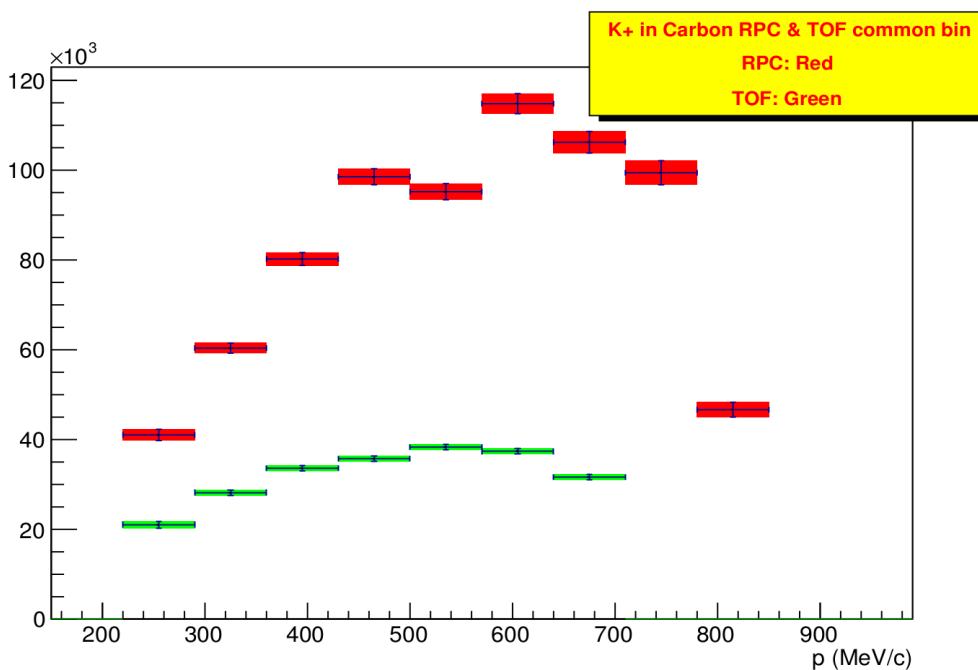


40 < θ < 52 region

Wolf K- TOF

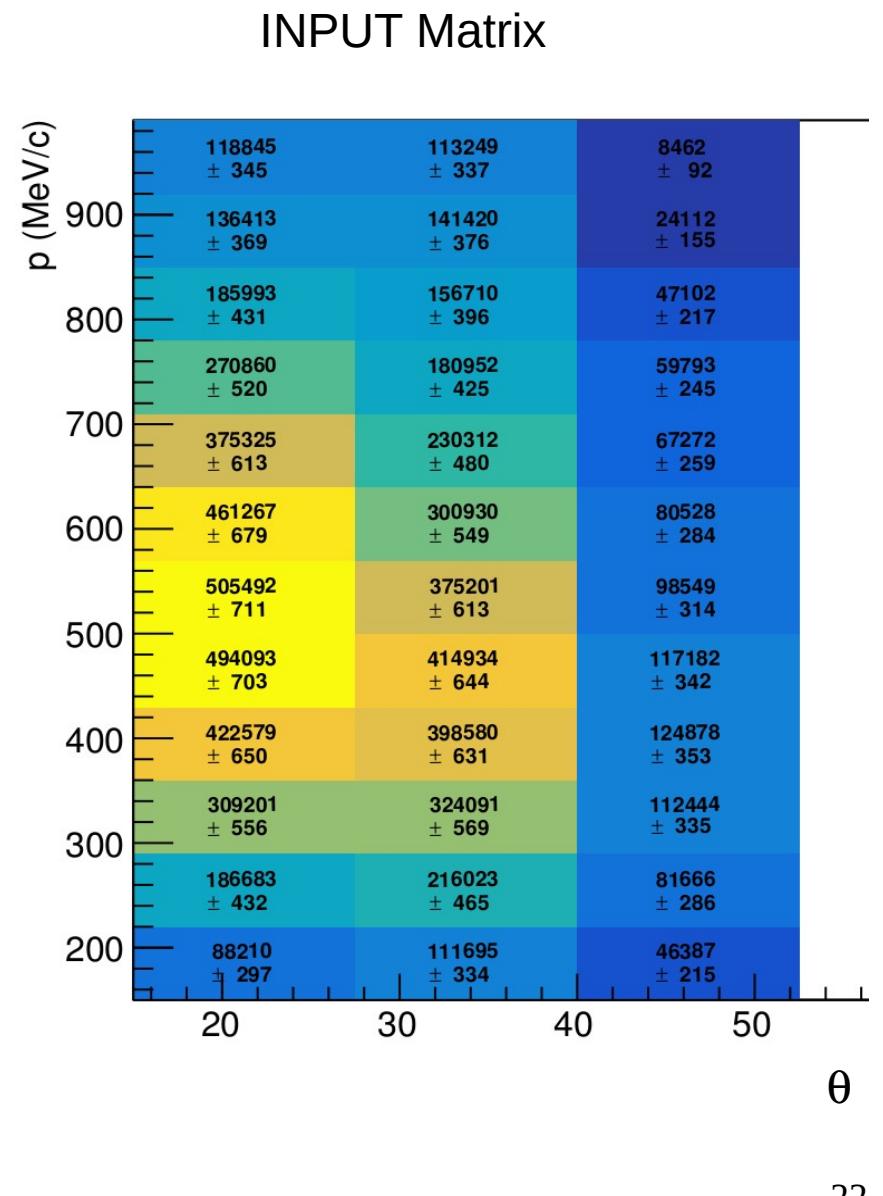
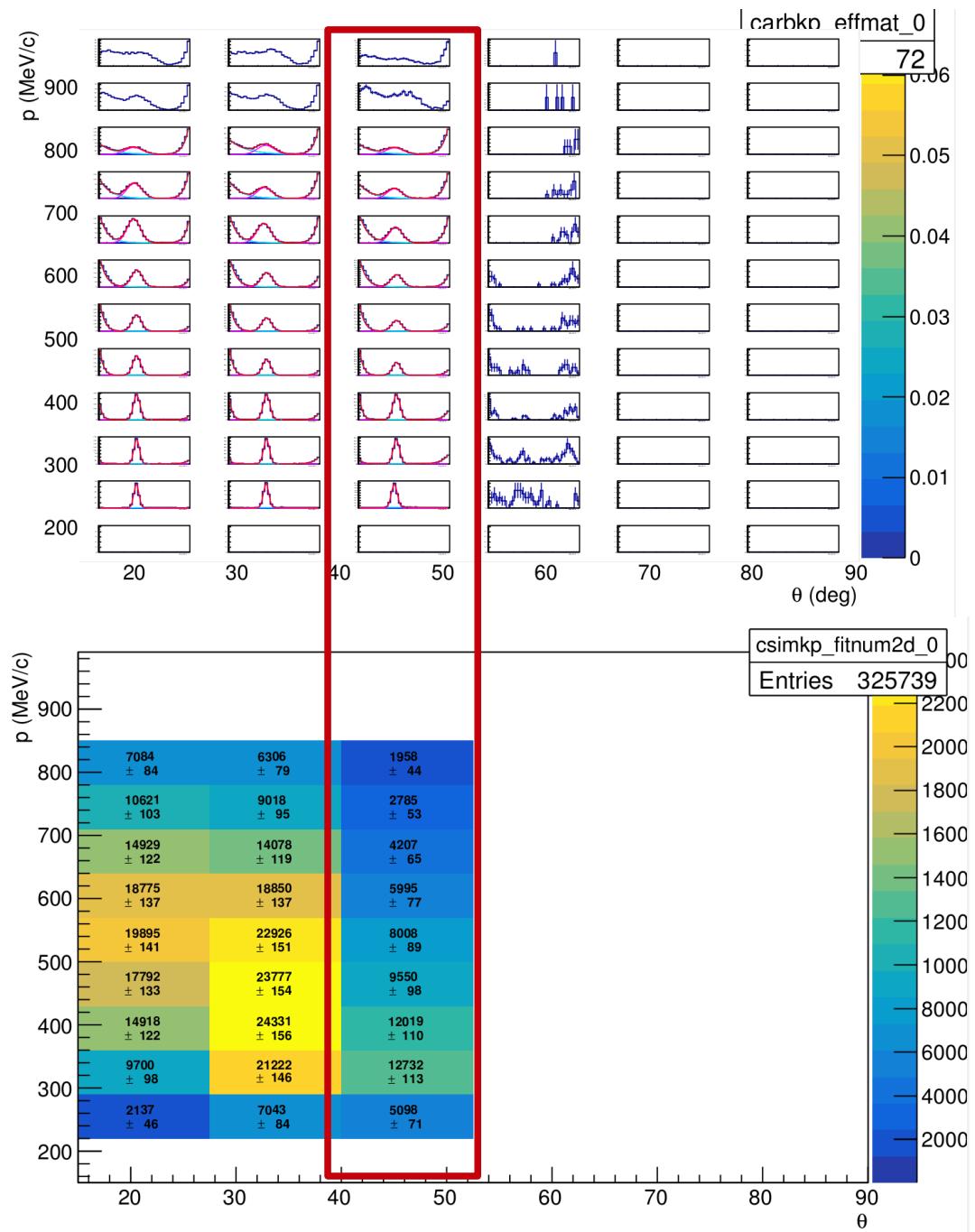


40 < θ < 52 region

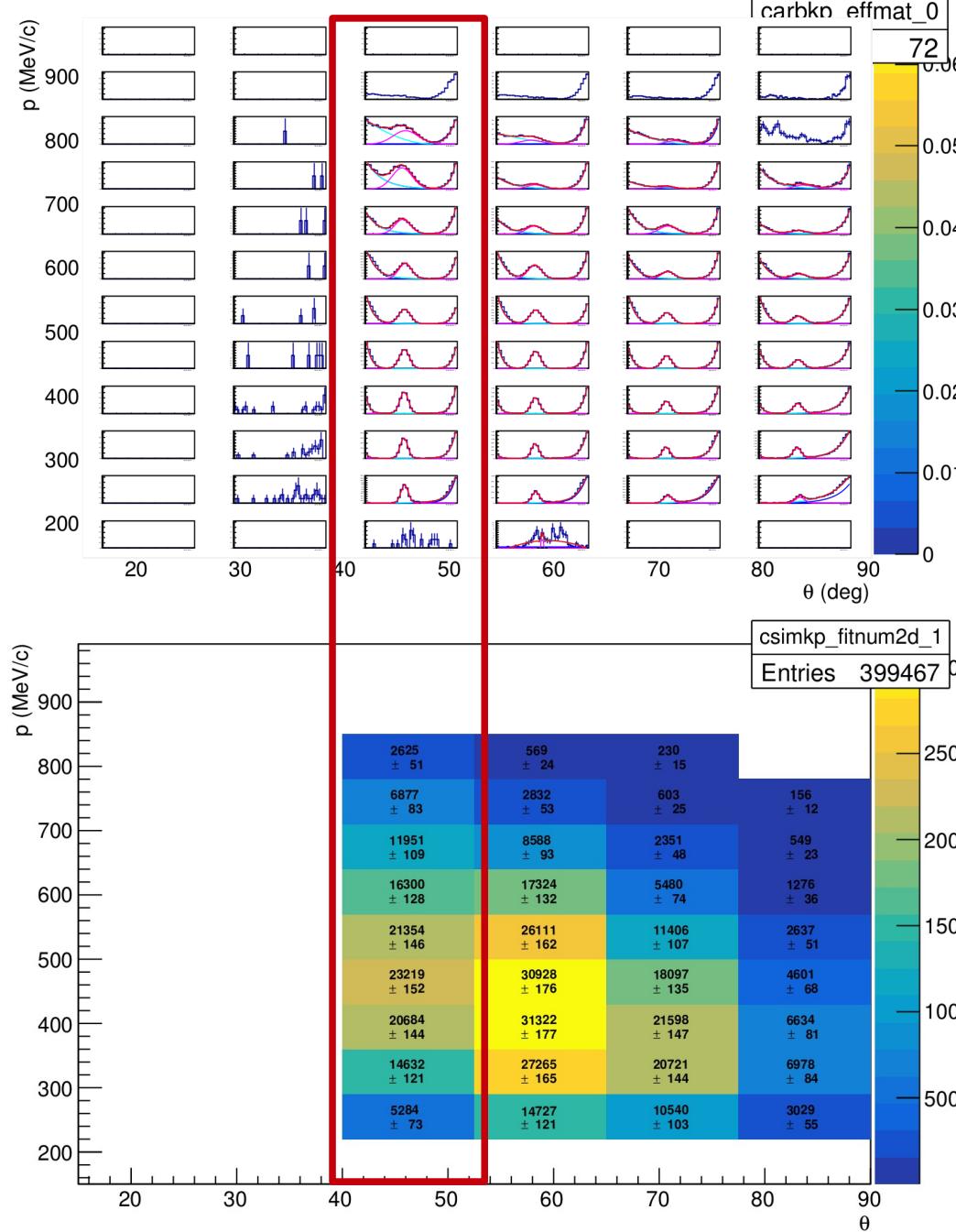


Spare

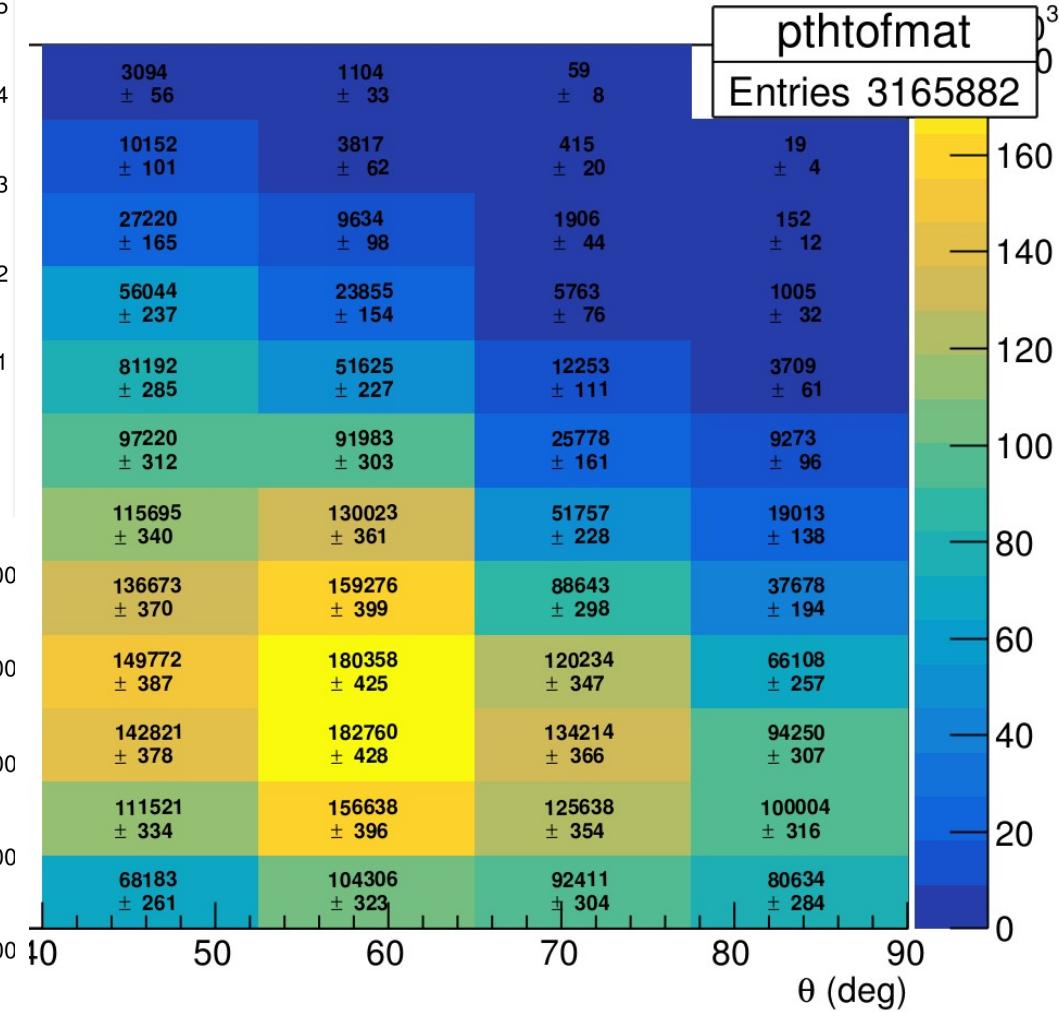
RPC Carb K+ efficiency



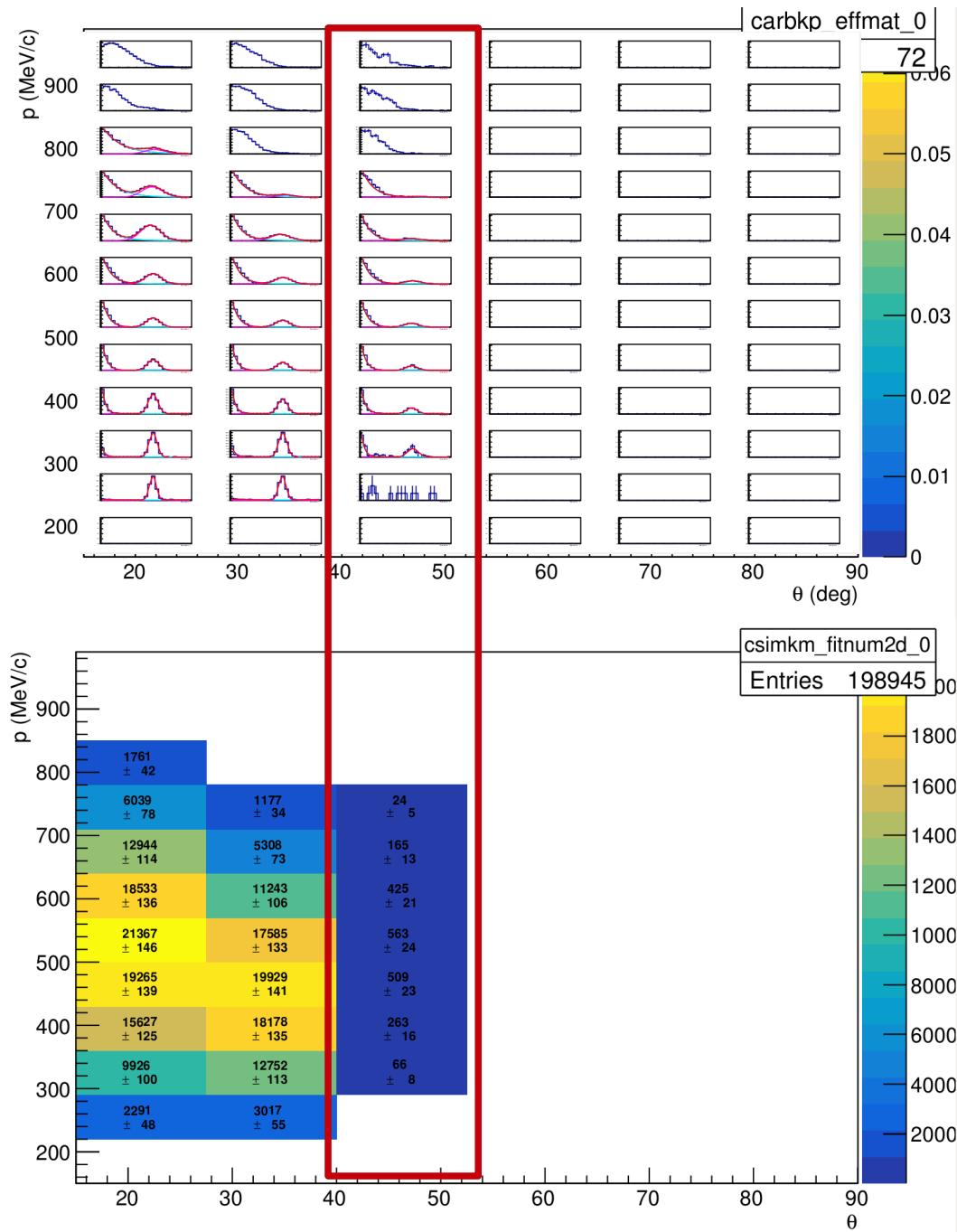
TOF Carb K+ efficiency



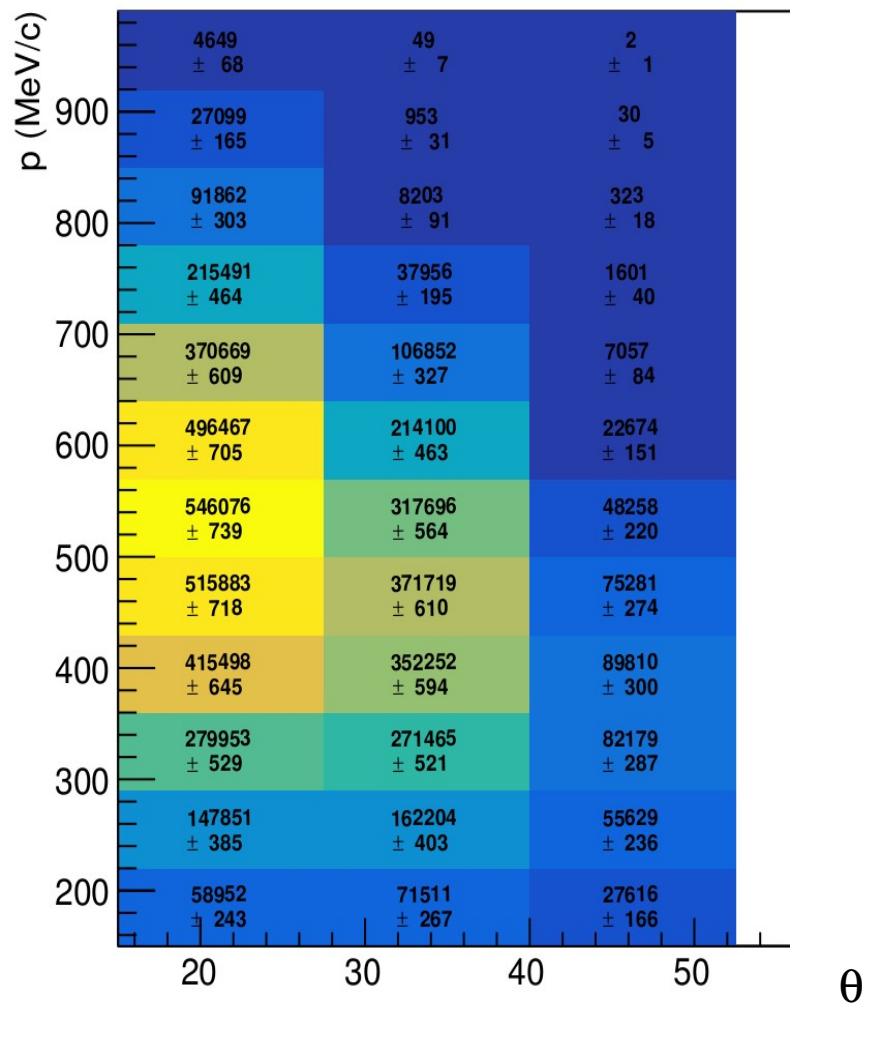
INPUT Matrix



RPC Carb K- efficiency

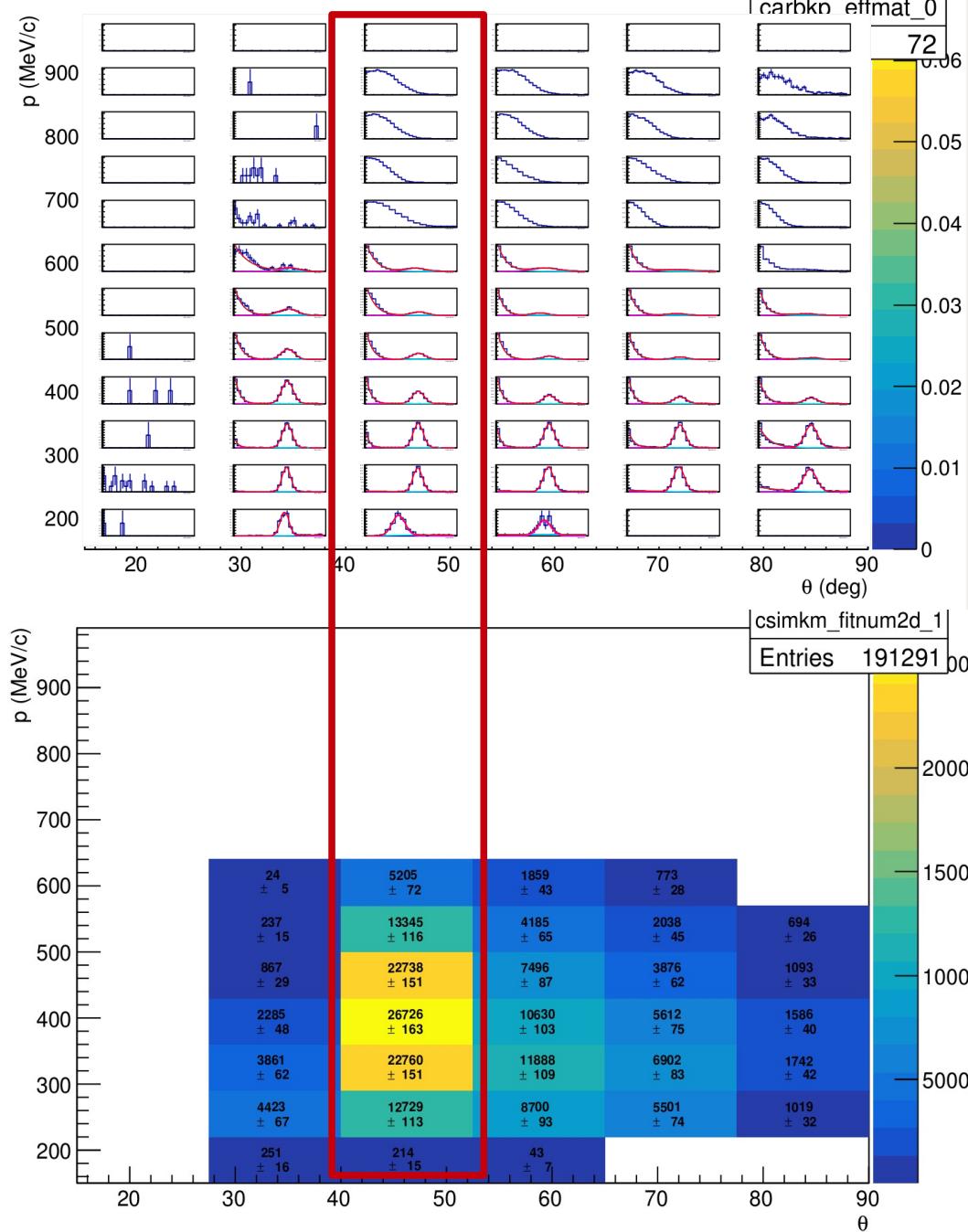


INPUT Matrix

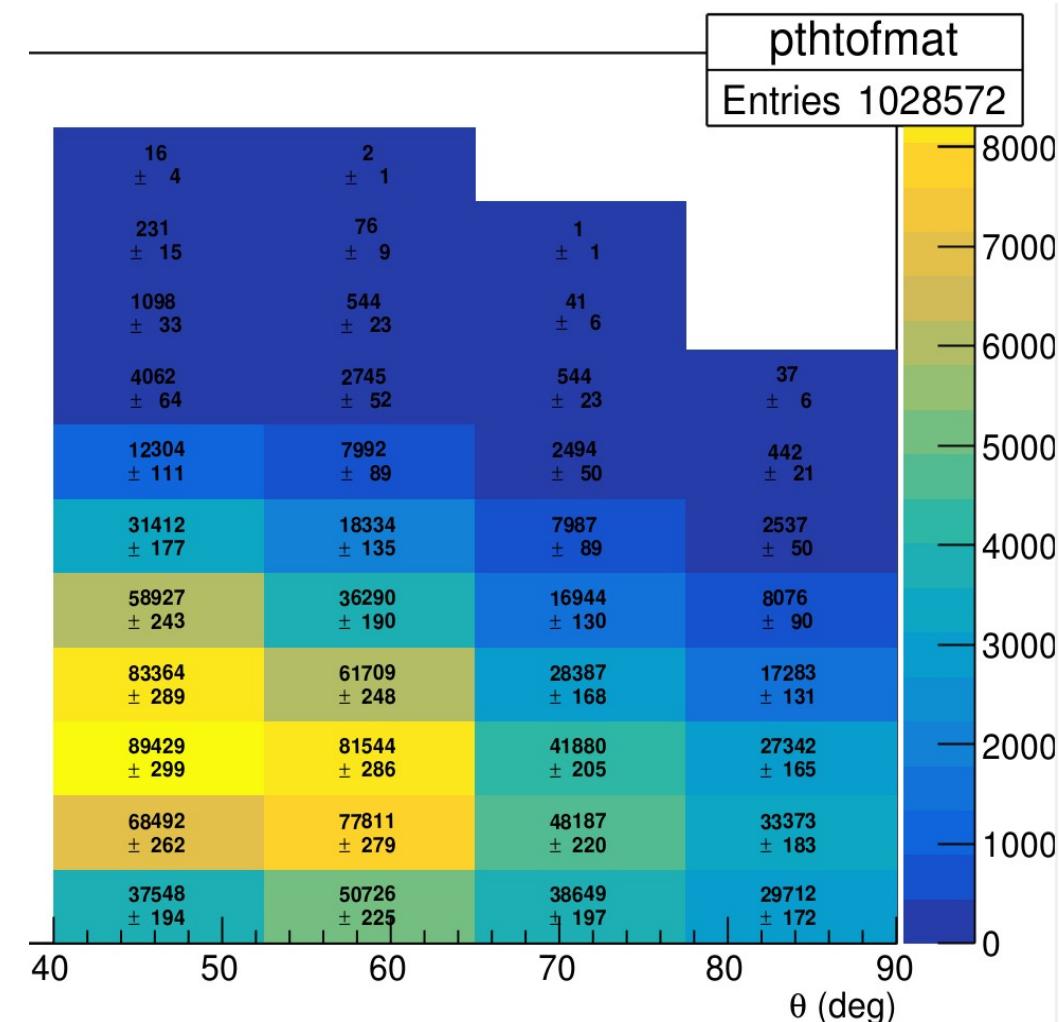


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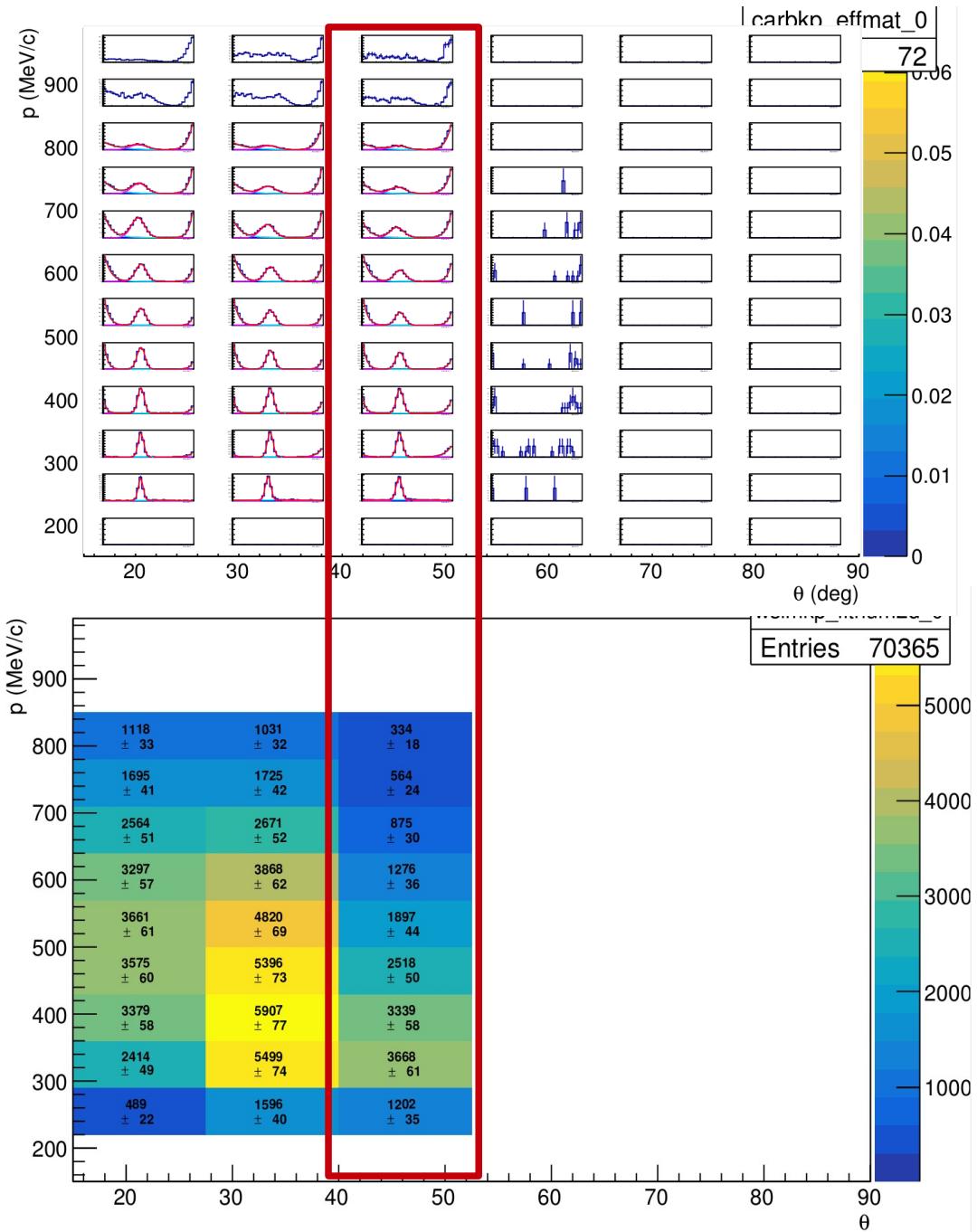
TOF Carb K- efficiency



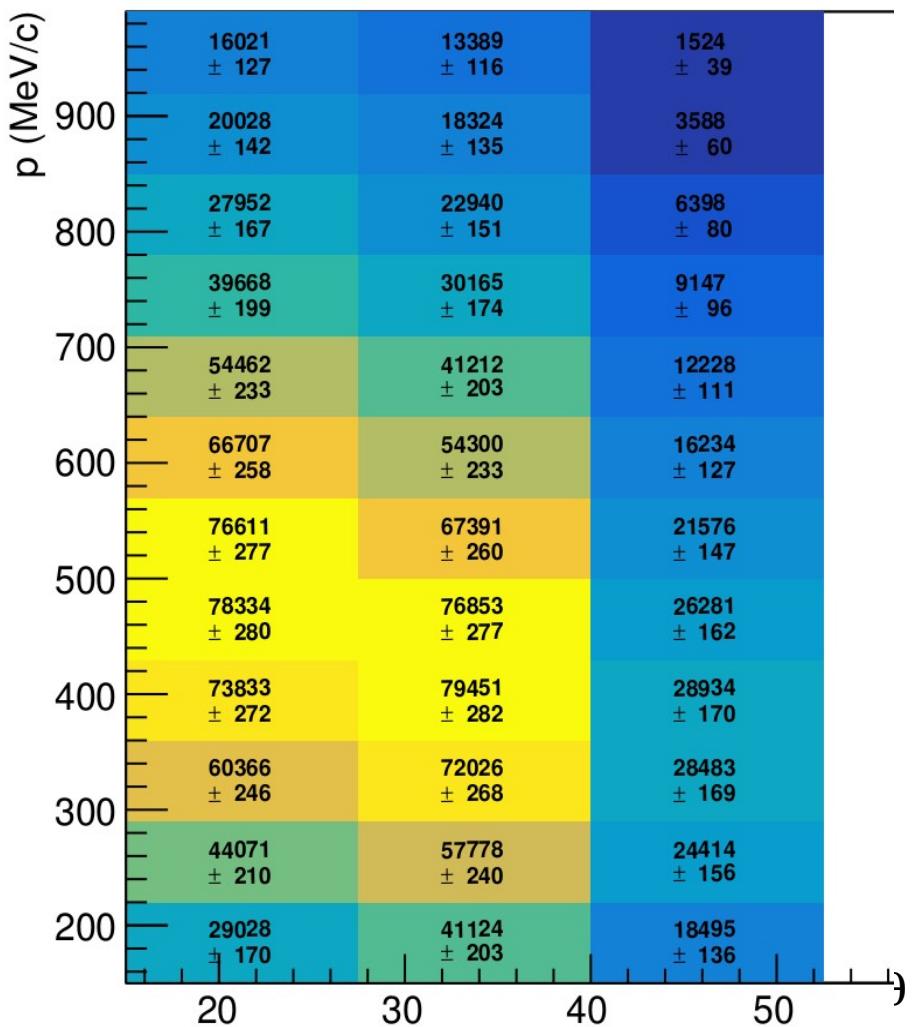
INPUT Matrix



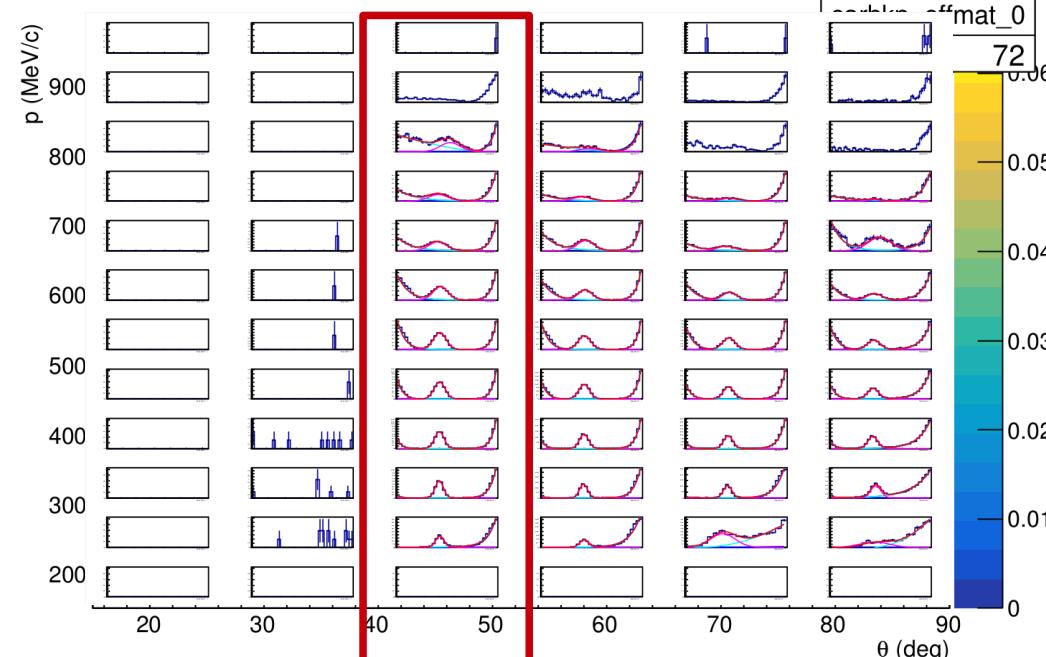
RPC Wolf K+ efficiency



INPUT Matrix

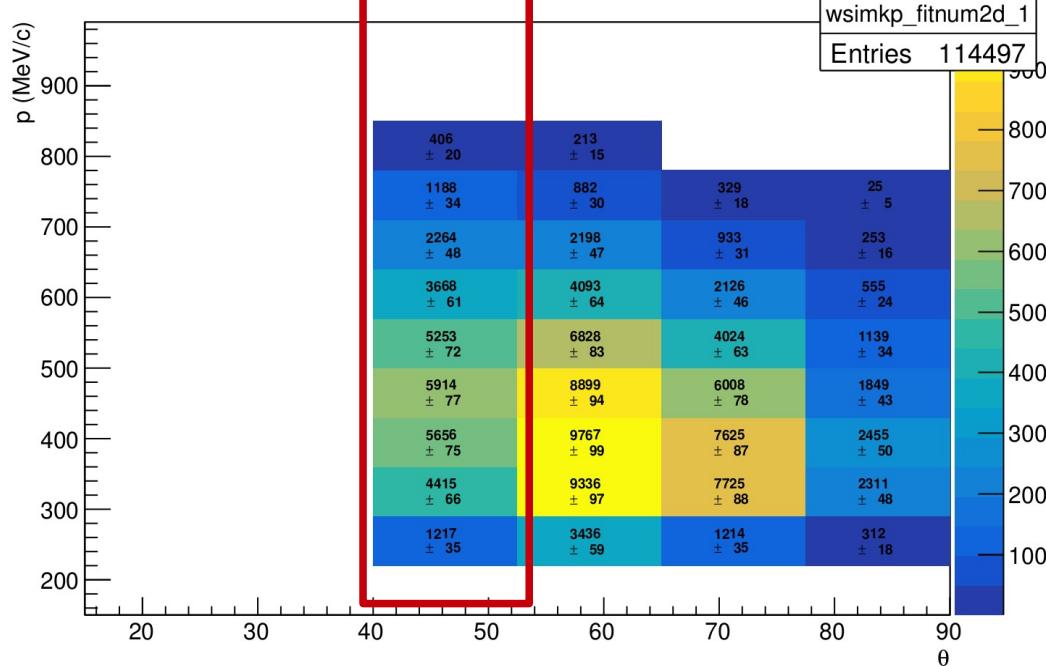
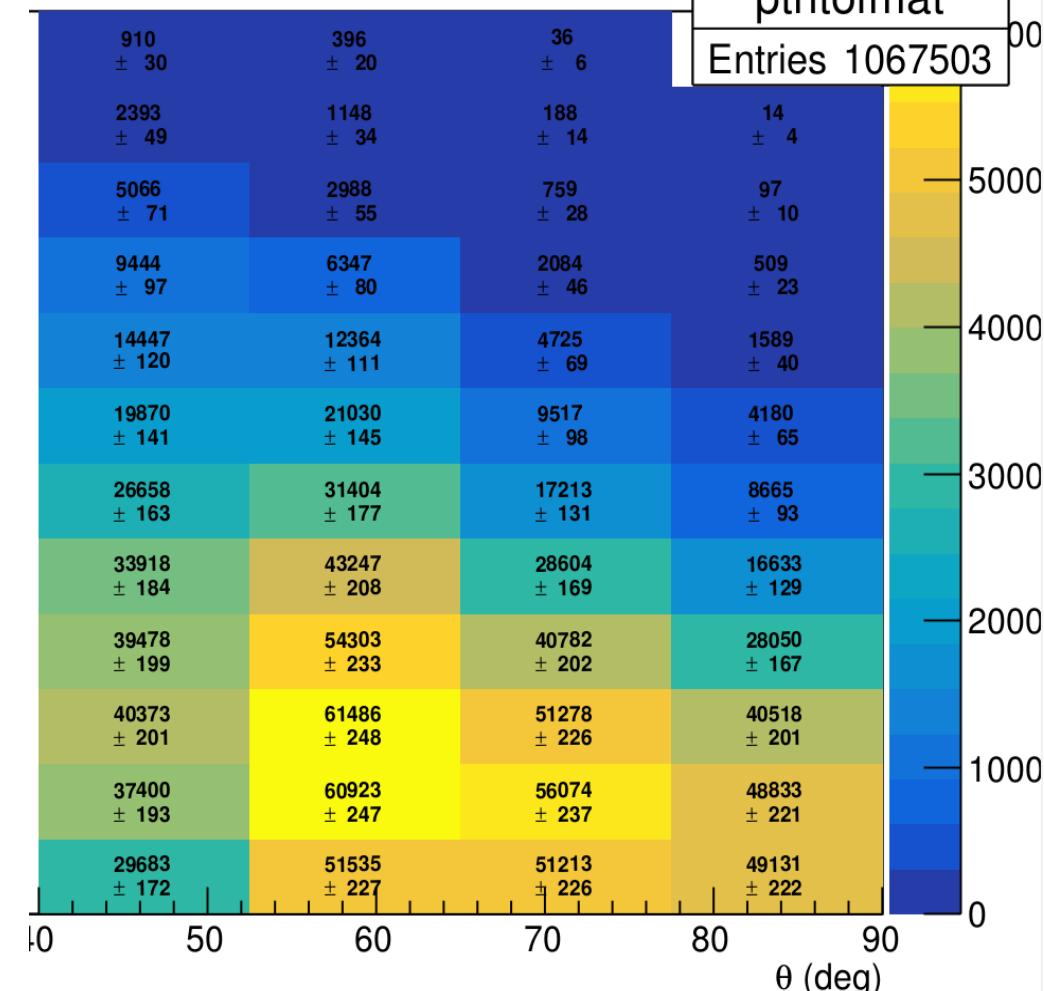


TOF Wolf K+ efficiency

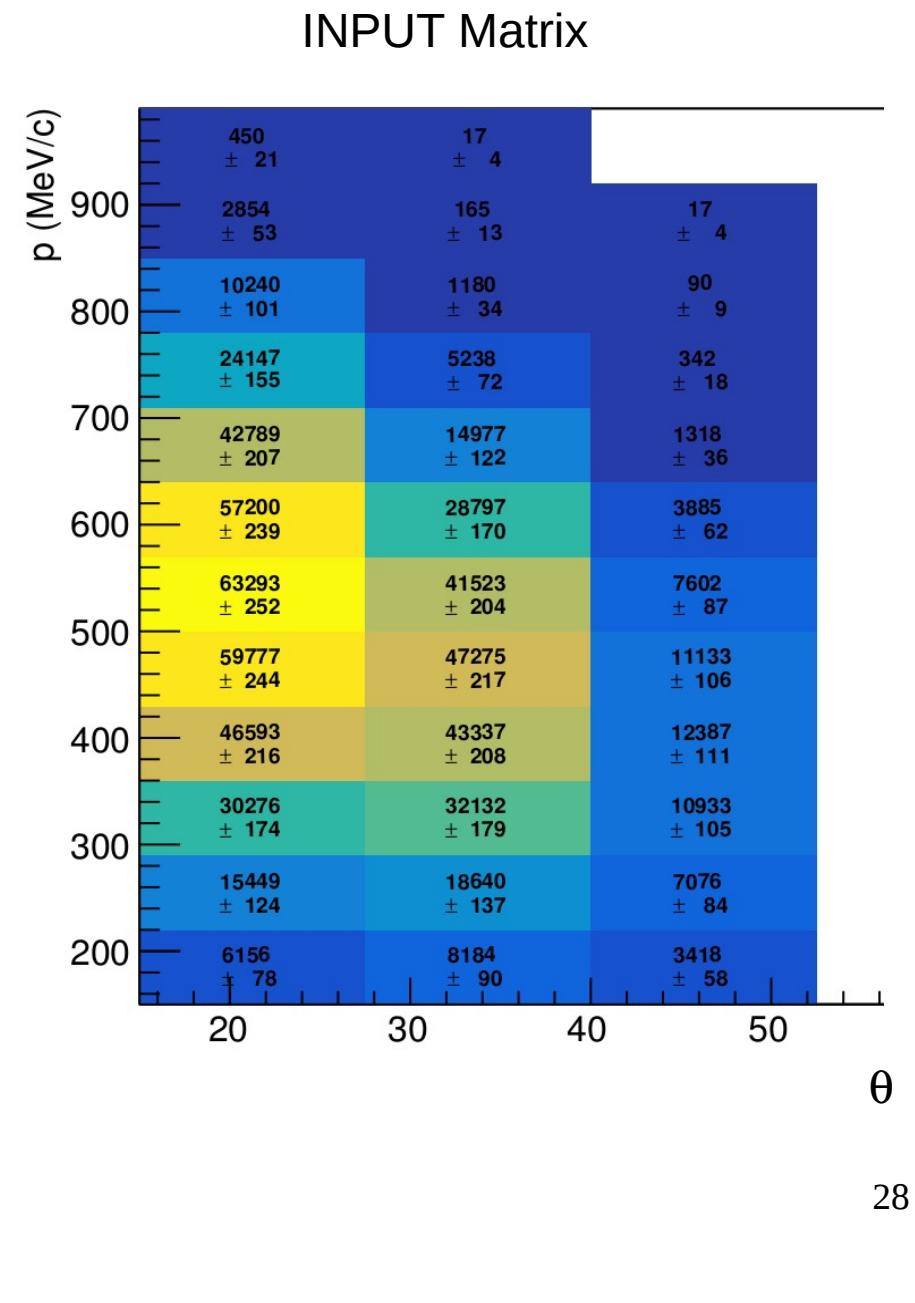
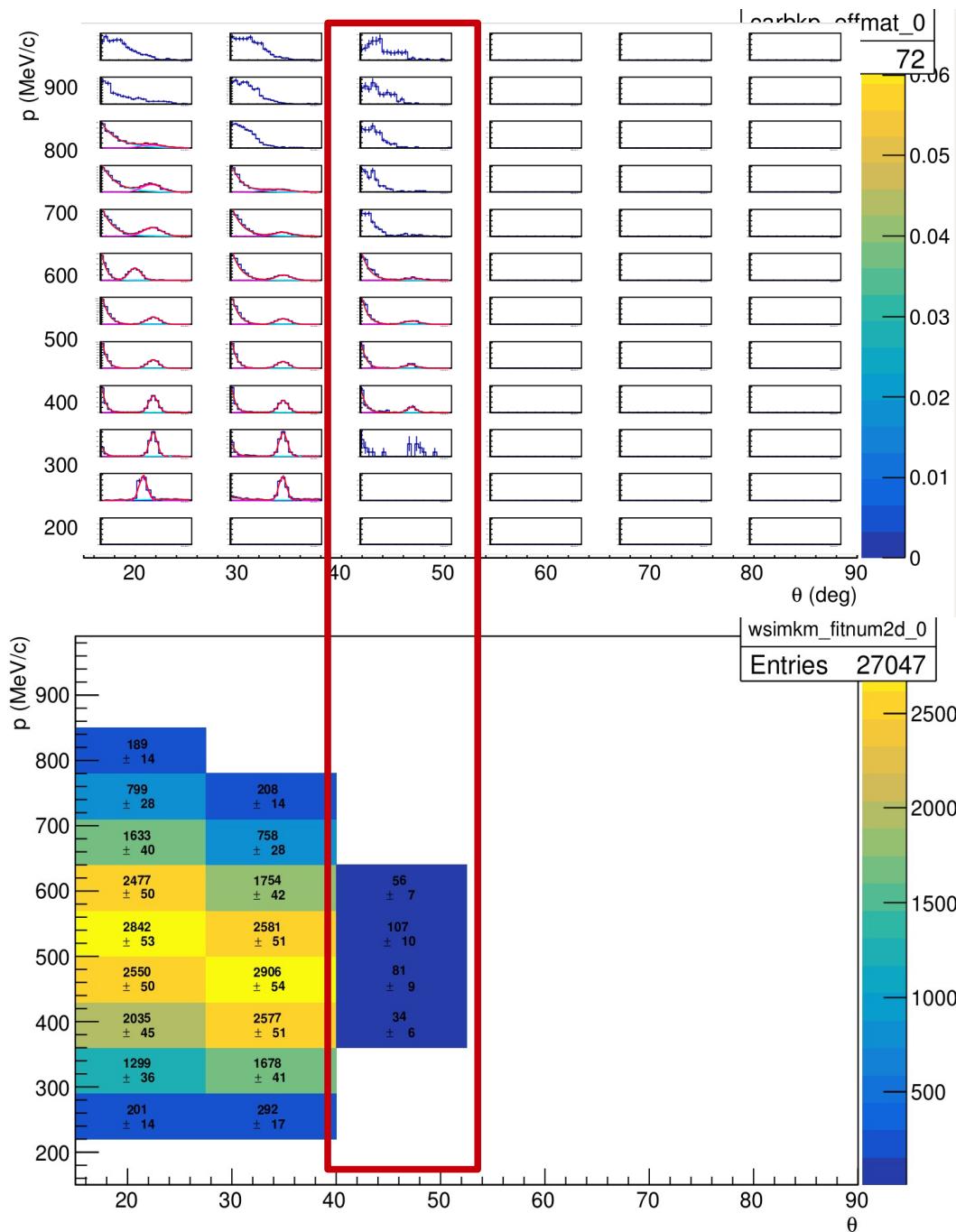


INPUT Matrix

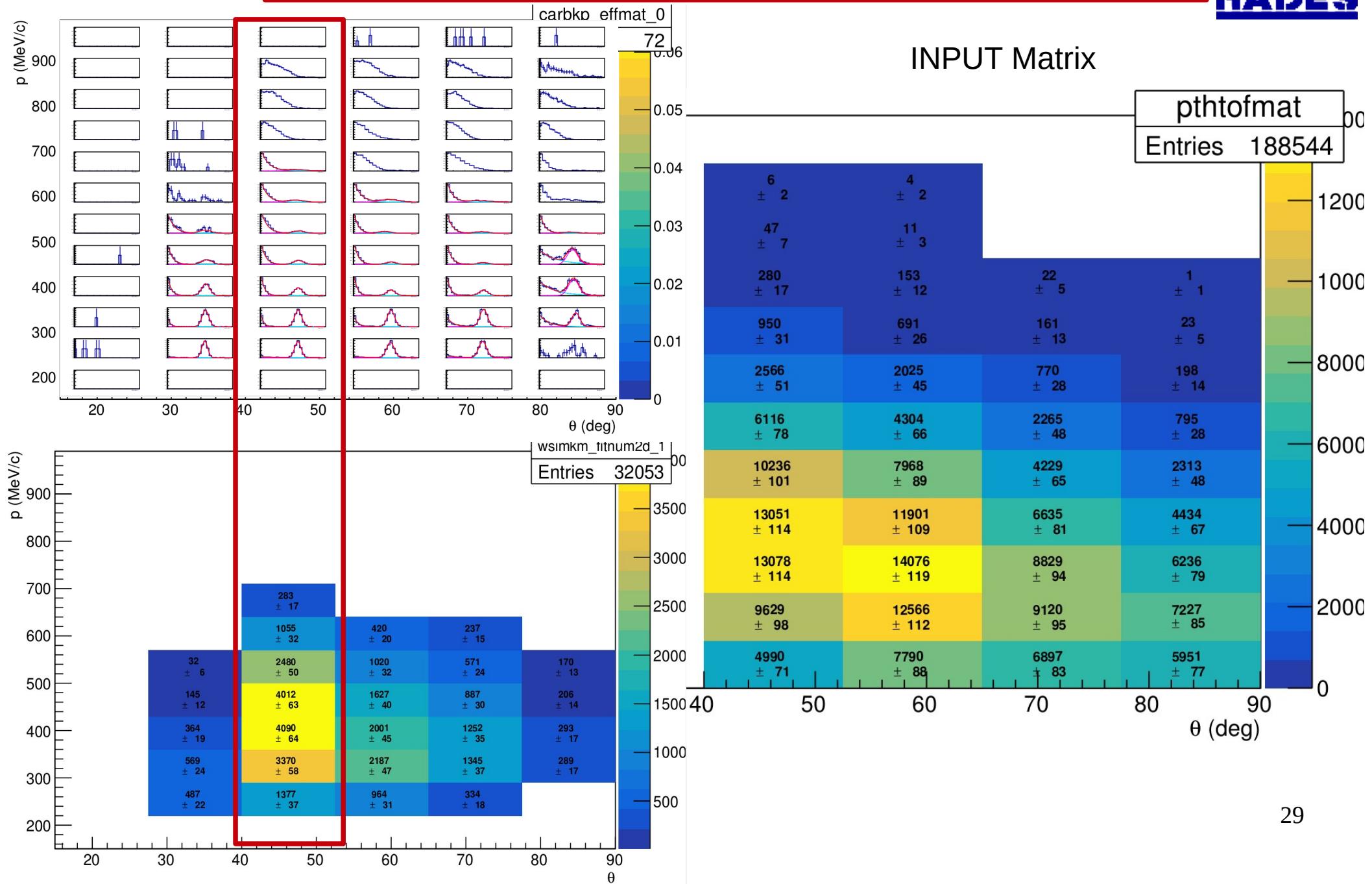
pthtofmat
Entries 1067503



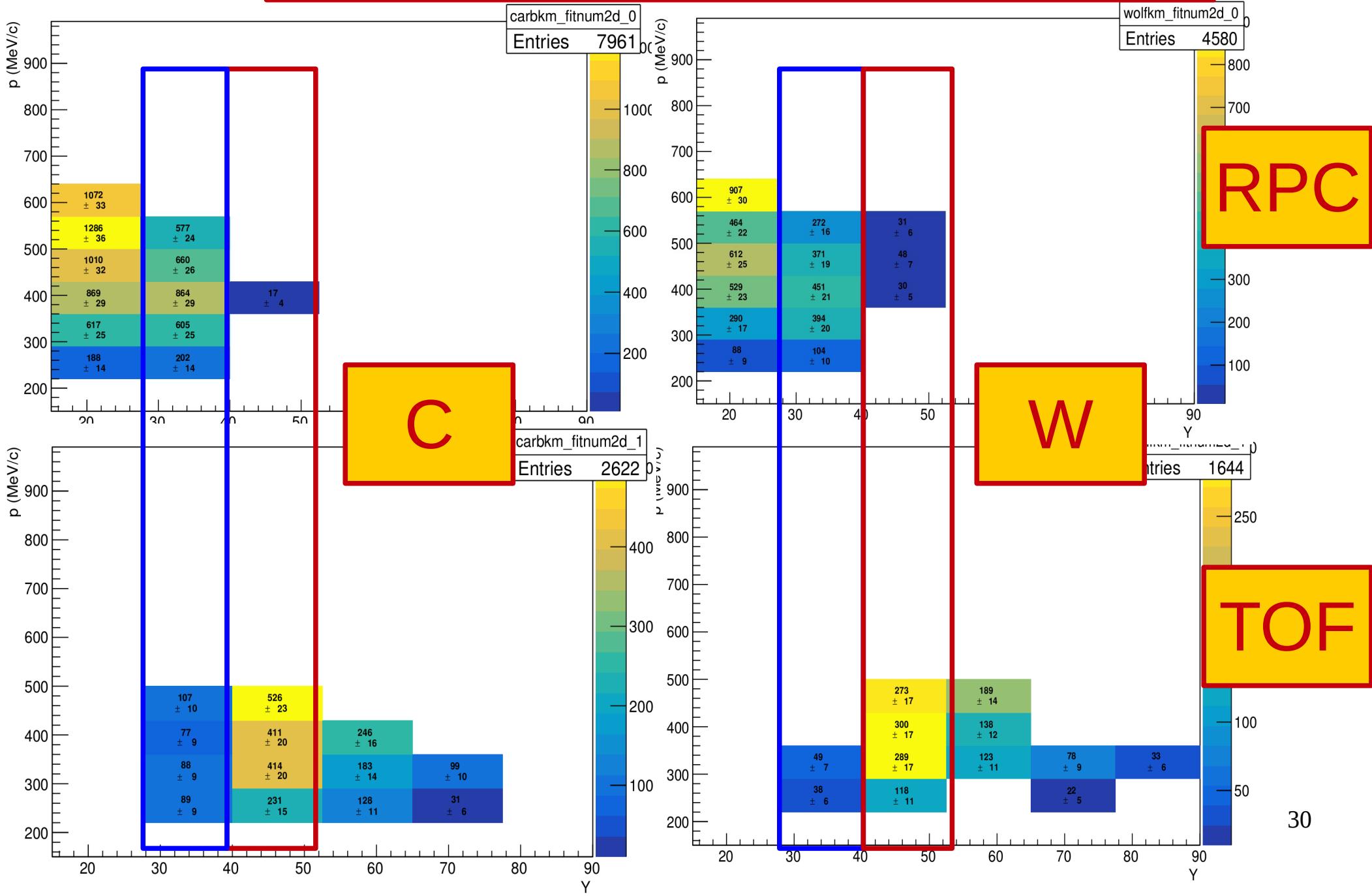
RPC Wolf K- efficiency



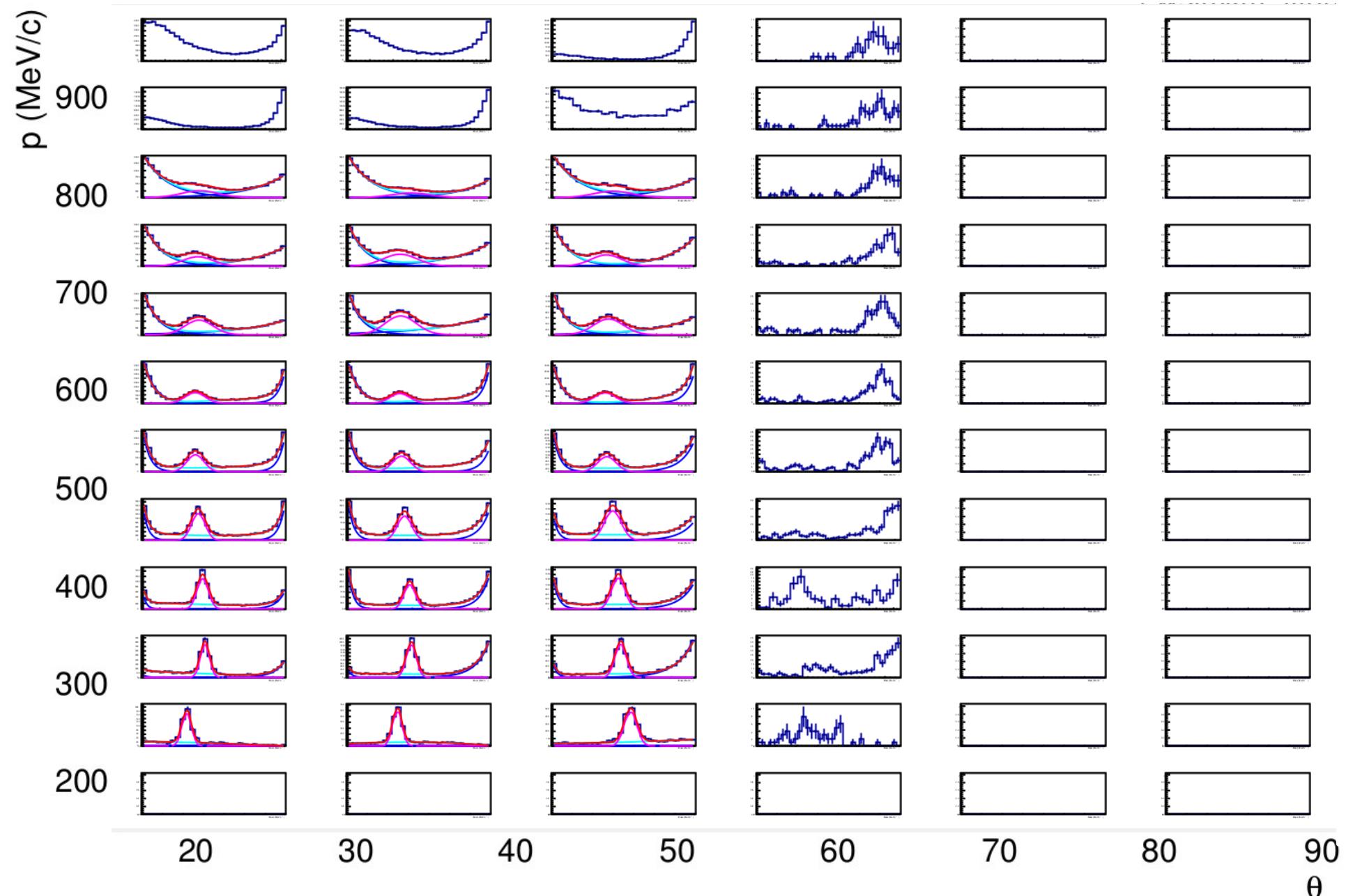
TOF Wolf K- efficiency



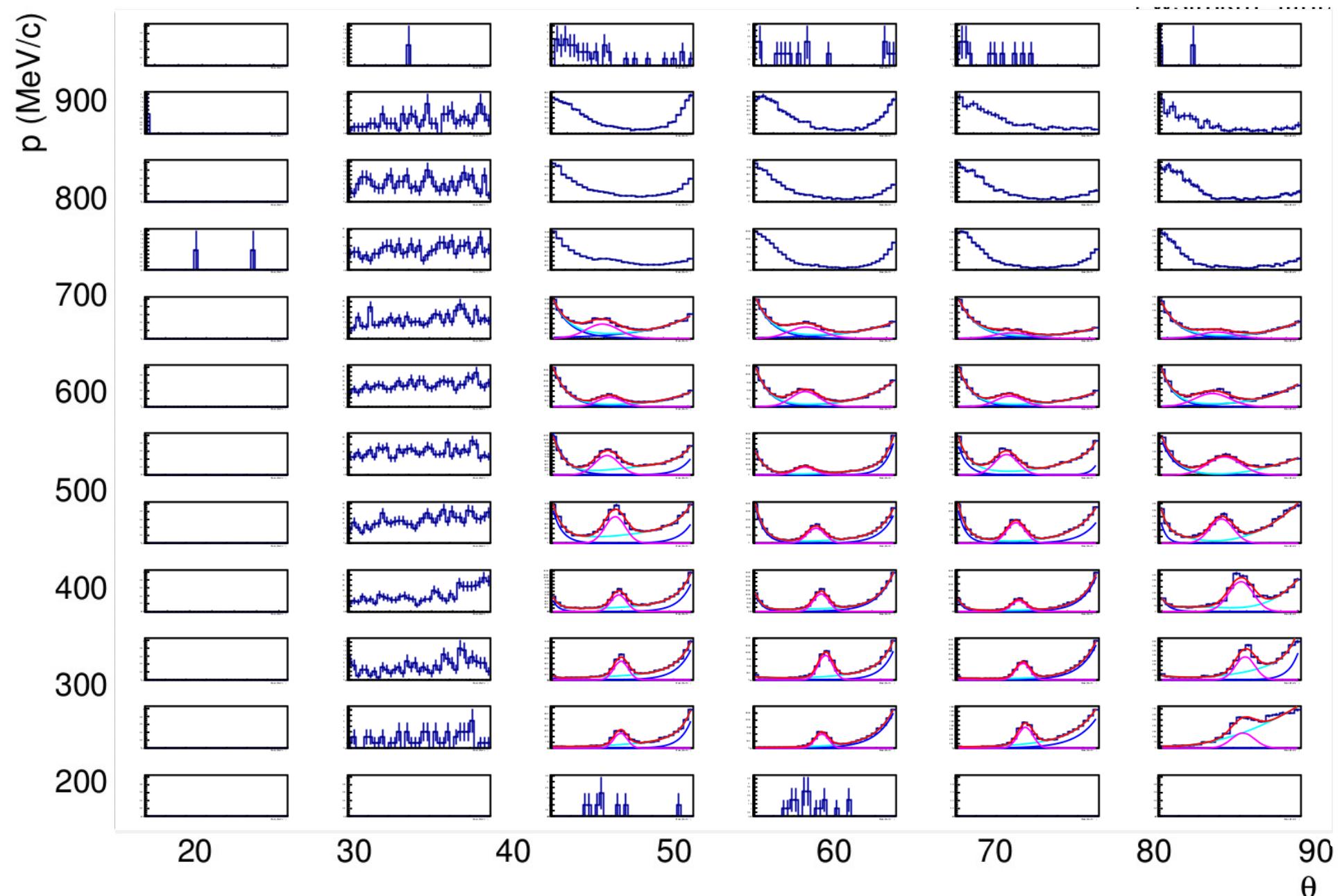
K- common regions (exp)



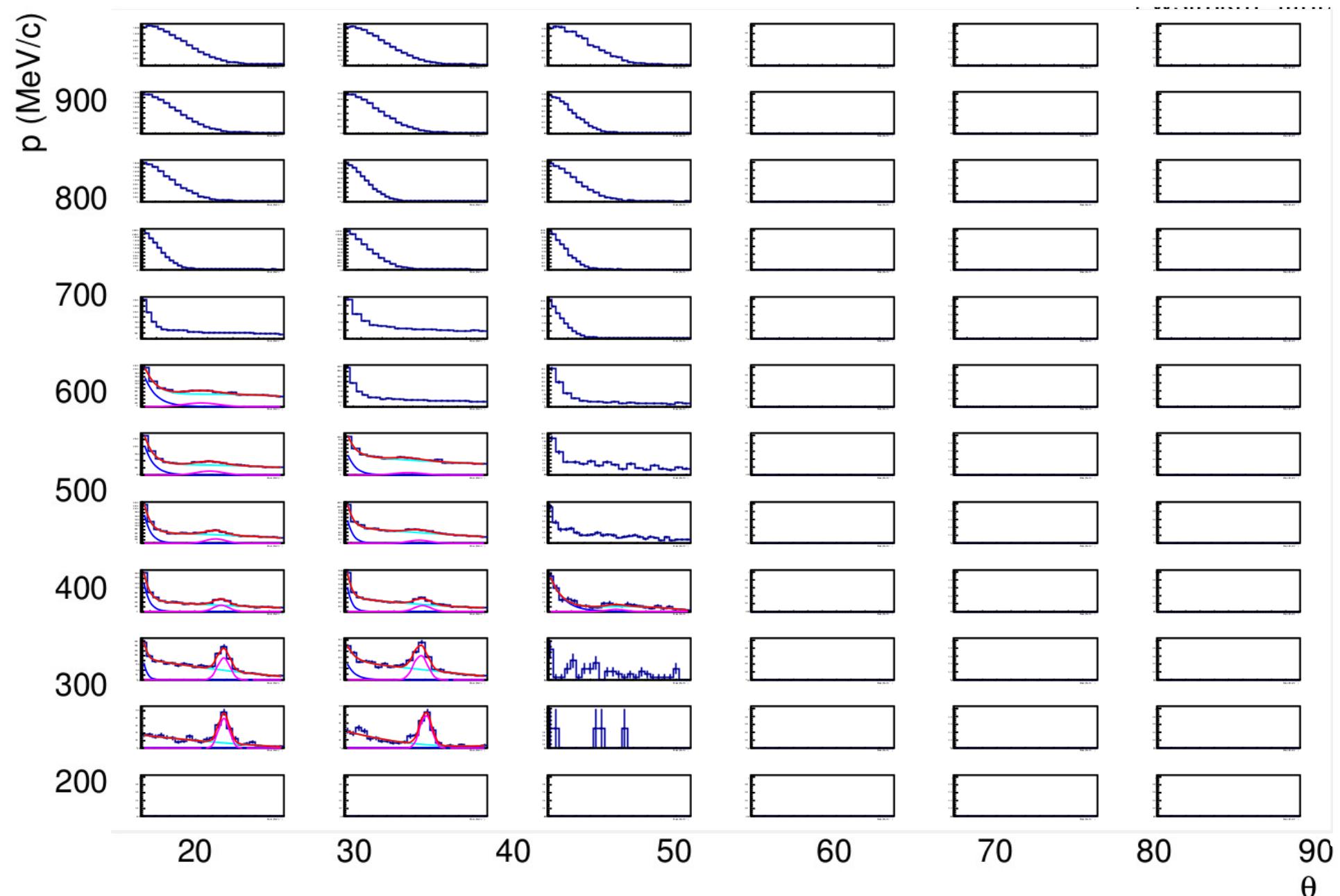
Carb K+ RPC FITS



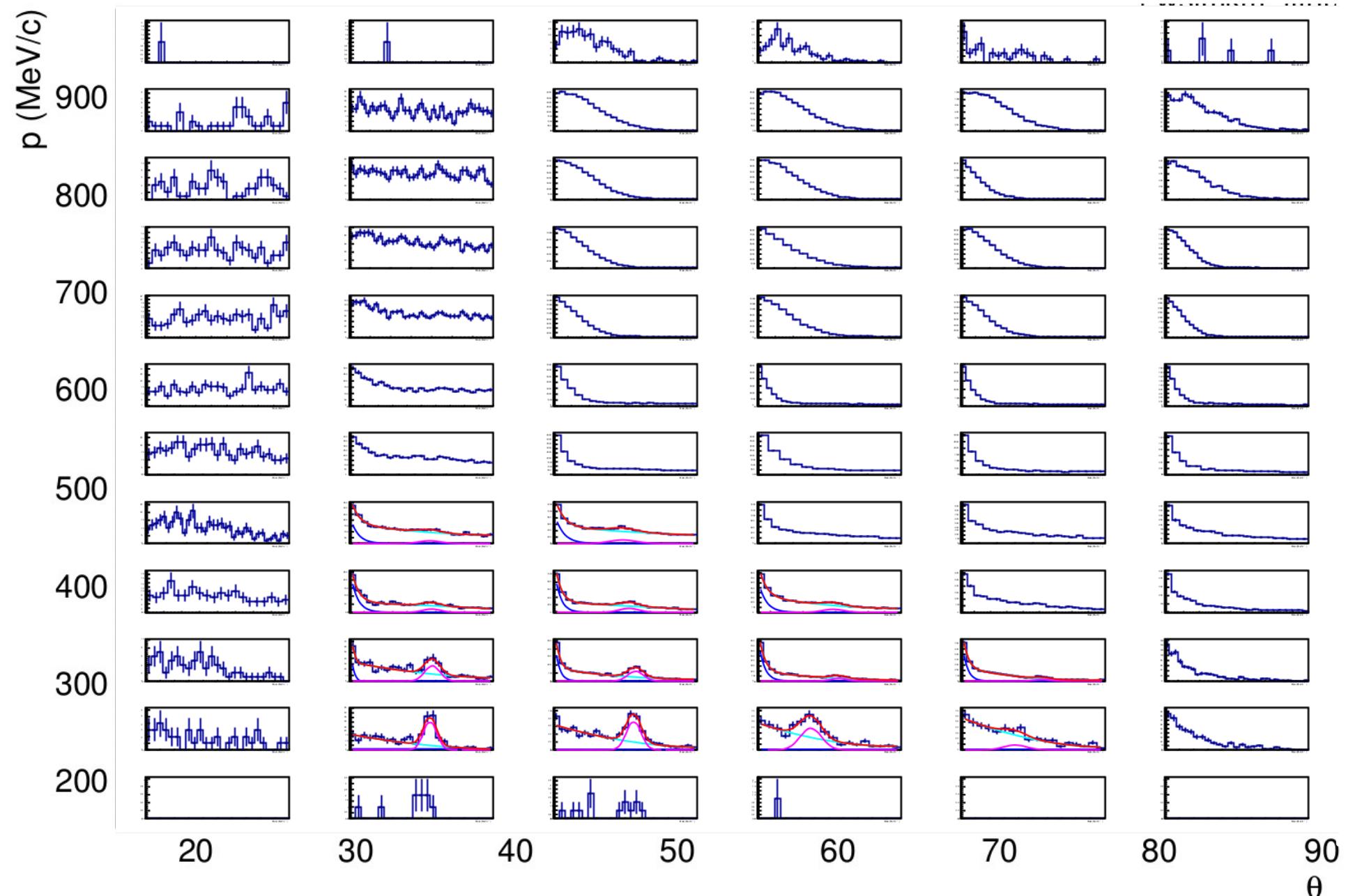
Carb K+ TOF FITS



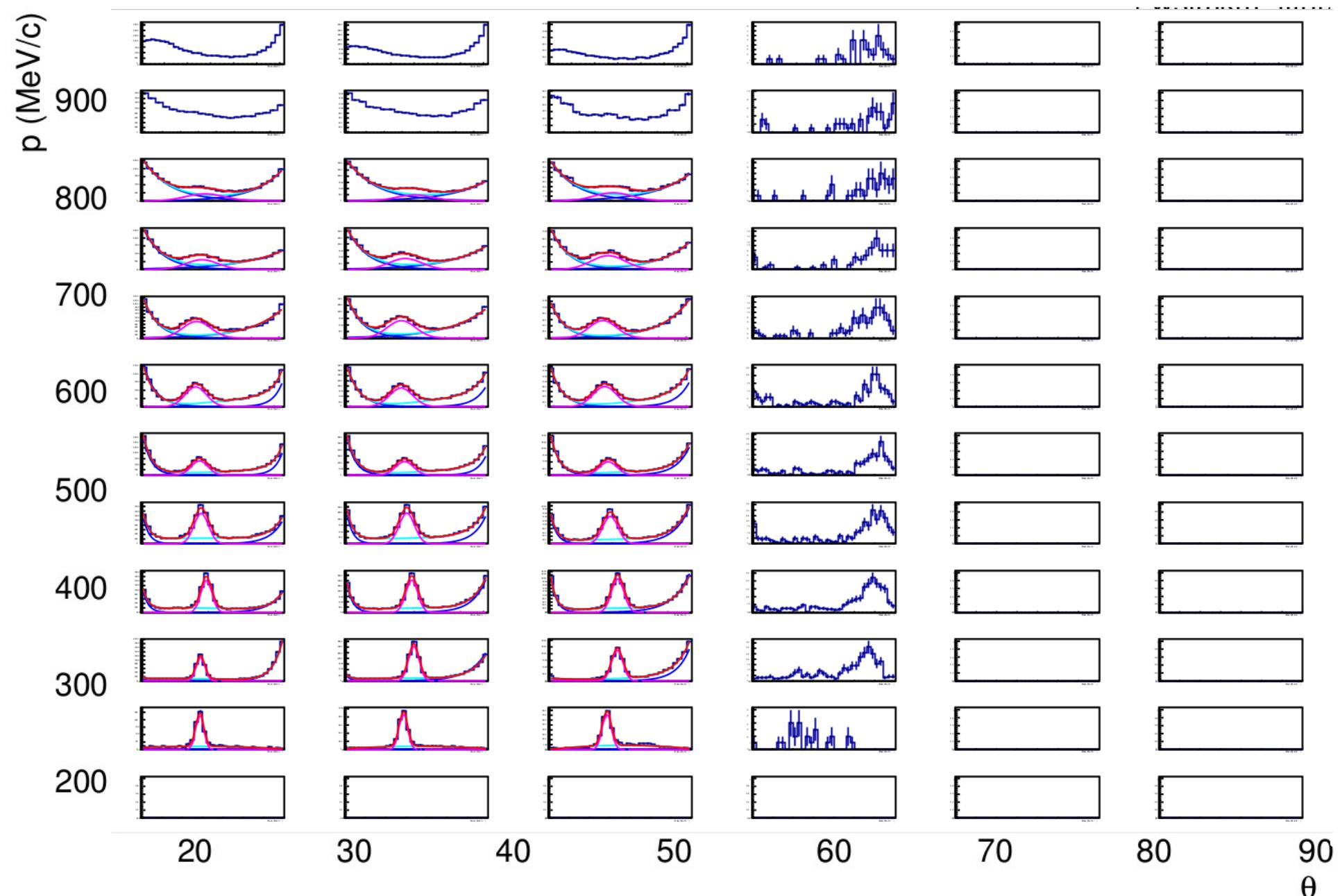
Carb K- RPC FITS



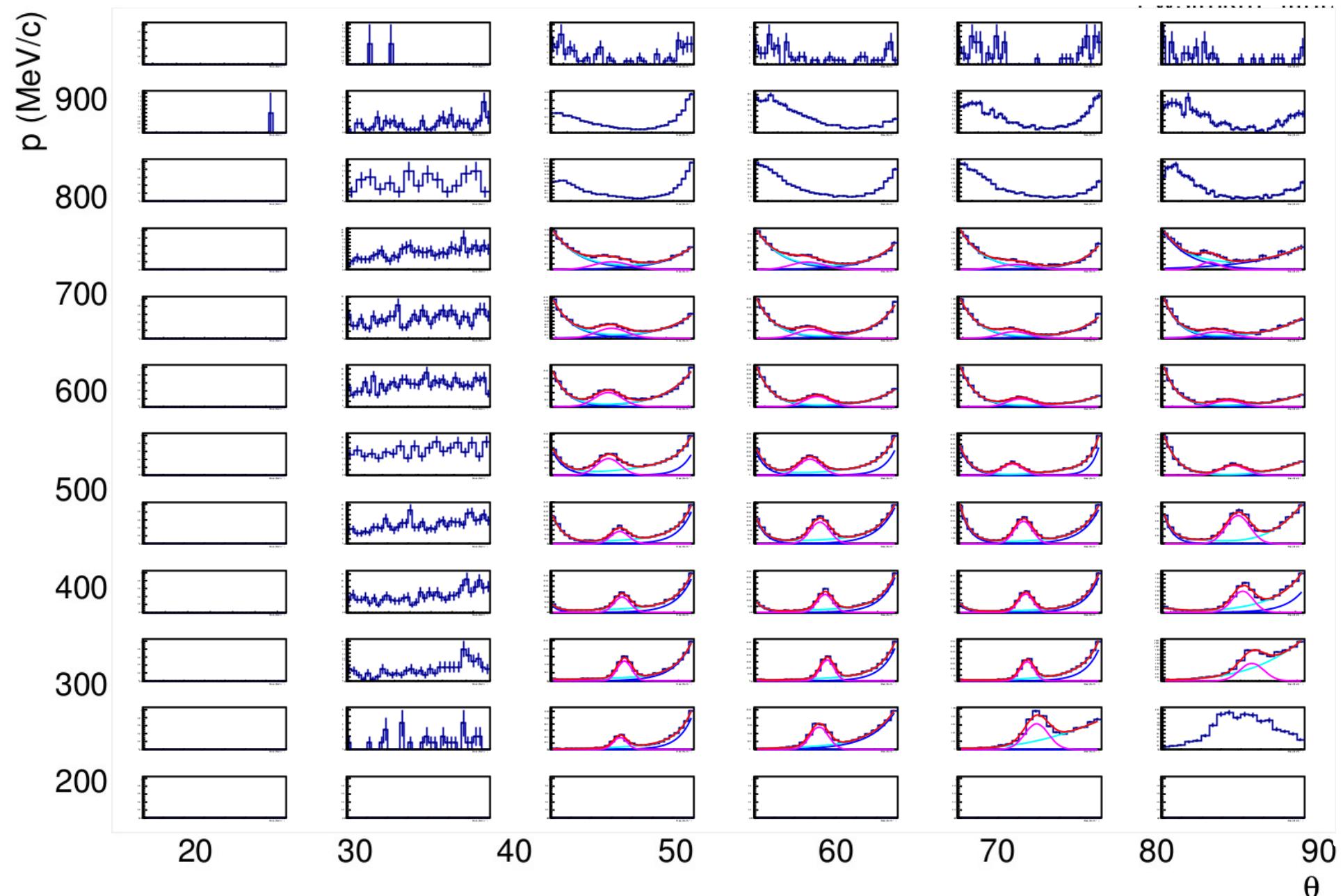
Carb K- TOF FITS



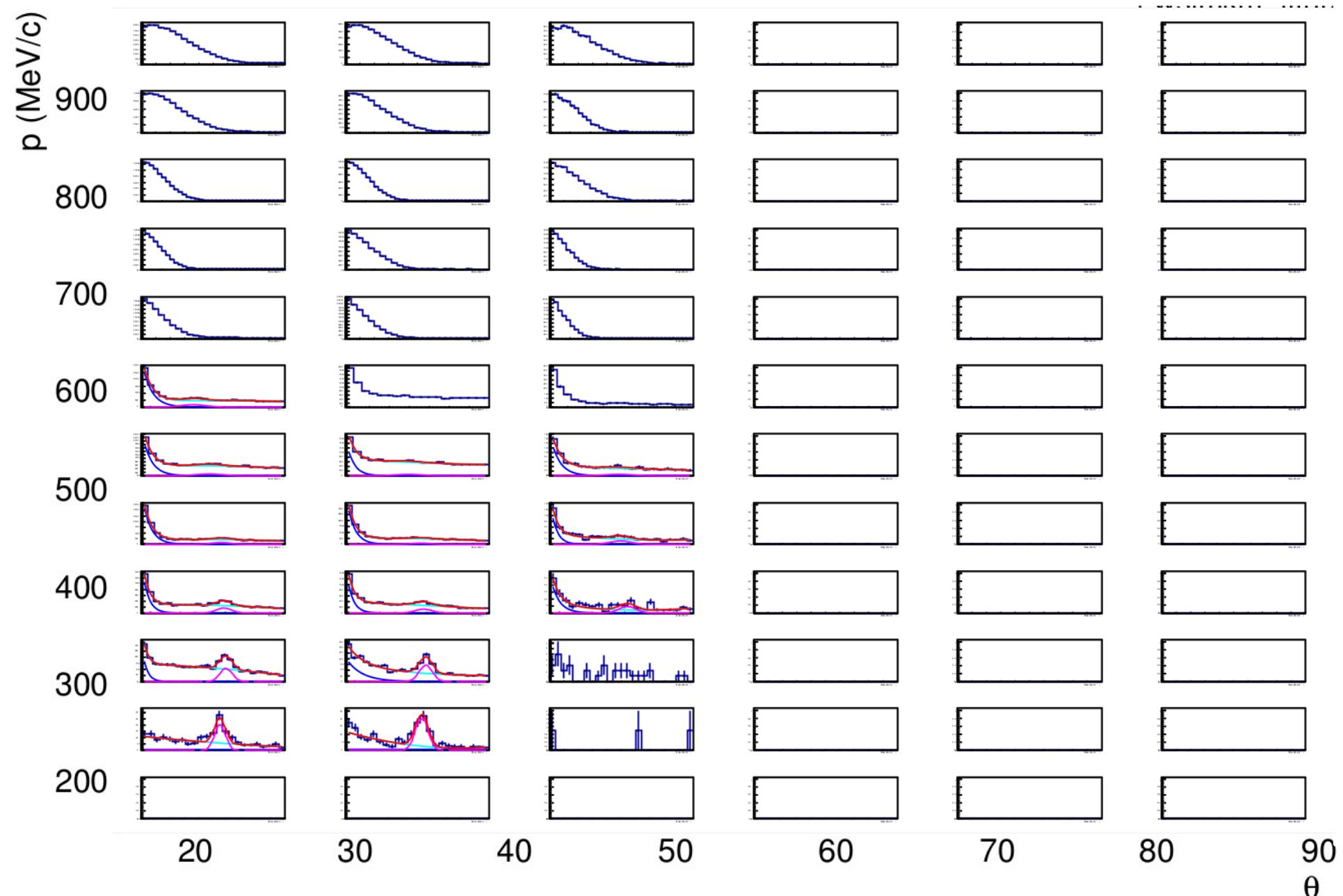
Wolf K+ RPC FITS



Wolf K+ TOF FITS



Wolf K- RPC FITS



Wolf K- TOF FITS

